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A JOURNAL DEVOTED  
 TO BEES  
 AND HONEY  
 AND HOME  
 INTERESTS.

ILLUSTRATED  
 SEMI-MONTHLY  
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BEESWAX from old combs will be much lighter if you first soak the combs several days, occasionally stirring and renewing the water.—*Le Rucher Belge*.

I CAN SING "God Save the Queen" more heartily than ever, after a visit from Mr. and Mrs. T. W. Cowan. They are delightful people, and, above all, they're good.

COUGH MEDICINE. Take a good pinch of sage, pour over it a pint of boiling water, let steep a few minutes, strain, add 3 tablespoonfuls honey, and drink hot throughout the day. *Le Rucher Belge*.

CONFLICTING ACCOUNTS raise the question whether it is not possible that some kinds of honey may be as ripe at 11 pounds to the gallon as other kinds at 12. [This is a very sensible supposition.—ED.]

I USE bottom starters  $\frac{5}{8}$  deep of the same kind as top starters, thin foundation. Possibly it might be better to have the bottom starters of a little heavier grade, but less than  $\frac{5}{8}$  would hardly be so well.

BLACK CLOTHING for bee-keepers is recommended in a late bee-journal. I'm sure I get fewer stings with white or light clothing. A black ribbon on a hat is a distinct point of attack if bees are at all cross.

IN GERMANY there are still some battles over the question of watering bees in winter. Herr Betz reports a colony wintering finely on dry sugar—a heavy blow for the waterers. I once tried watering in winter, but my bees were too stupid; they wouldn't drink.

YELLOW SAND and yellow bees in Cyprus, black general appearance and black bees in Africa, etc., p. 427. But how do you account for yellow bees getting yellower in this country? Yellow gold in Klondike and California, eh?

NORTH-POLE BEES. *Le Rucher Belge* says the explorer Ejrind Asrup found many bees in latitude 83° north. He thinks they may be at the north pole, as the remaining 7° would

make no great change in flora. There's only three months' summer; but as the sun doesn't set in that time it's as good as six months here, and plants develop with astonishing rapidity and vigor, and the flora is of extreme richness.

THIS YEAR is spoken of as remarkable for fruit-bloom and swarming. Not in this region. While Medina bees were swarming, our bees were killing drones. Abundance of fruit-bloom, but not one day in three bees could work—so cold and wet we didn't let fire die down in sitting-room till June 2.

EXTRA COMBS of sealed honey are a bonanza in spring. Every one says so, but not one in ten has them. They don't have them, because they don't get ready for them now. I'm setting aside a certain number of colonies for that special work. [We laid by last fall, as we always do, a large stock of sealed combs of honey. It was very convenient to pull on this stock this spring and early summer when bees ran short of stores.—ED.]

HASTY is above the average when he eats 12 oz. honey daily; but you're just as much the other way, Mr. Editor, when you put the maximum at 12 oz. weekly. A properly reared child of 8 ought to beat it. [If Hasty has gone to one extreme and I the other, I would wager Hasty some of our best fence honey that my dose would be more conducive to longevity in general than his dose. Too much sweet, for me at least, makes trouble.—ED.]

IF YOUR GIRLS make such slow work filling a T super, Mr. Editor, I'll venture the guess they don't use a filling-board, but just set the sections on a flat surface. If that's the case I think I'll agree to fill two to your one if you'll allow me the filling-board, neither of us to put in separators. [If you will come out here this summer we will arrange for a contest between you and the girls. It is presumed, however, that you will come out ahead, for you practice and work with nothing but T supers, while our girls fill section-holders, T supers, Ideal supers, wide frames, and every thing of the sort.—ED.]

LOTS OF PUZZLES about that two-story business. Only once have I succeeded in getting as much comb honey when two stories were left for the season. That one time, the only

super I had filled in three apiaries was by a two-story colony. [It is possible that locality has something to do with this whole question; but I would explain that it is not our practice to leave the second story on a comb-honey hive the whole season. After the colony that has two stories gets to be roosting strong, the extra story may be taken away and given to a colony run for extracted honey, and its place is supplied with two comb-honey supers containing full sheets of foundation.—ED.]

MENTION has been made of plain sections used without separators, simply placed at the right distance apart. Now the question is, what gauges them at the right distance, and what holds them there? [No definite device, T super, or section-holder has been arranged as yet to hold plain sections without fences; but stops can be put on the section-holder bottoms at certain positions in such a way as to separate and hold at equal distances the plain sections. Stops might be arranged in the T super, but not so easily. If plain sections are used in wide frames, then all that is necessary would be to space them so that the sections would be at the required distances apart.—ED.]

MR EDITOR, I see you think of raising at four corners, and at bottom of p. 431 you speak of "60 inches square of space." Don't you think that would be overdoing it just a little? Let's see; that would be 25 square feet, hoisting the hive in the air about 5 feet! Rather topoly. Better give 60 square inches a fair trial first. [Ah! I see my mental gear-wheels must have slipped a cog. When I used the words "60 inches square" I meant 60 square inches. Doctor, you might have saved me all this humiliation by taking me for what I meant and not what I said. To get even with you I am going to say you did the same thing once, you remember, by speaking of so many "decimeters square" instead of "square decimeters."—ED.]

HADN'T THE COLONY got into the craze for swarming *before* they had the extra room? is asked, p. 422. I'm sorry to say no. Empty story was under before they dreamed of swarming. Possibly they swarmed rather than cross the space between the two stories. Right in this connection you speak of scattering brood in two stories, but I can't make out whether you gave the second story at the time of thus scattering brood, or whether it was already there. Please tell us how that was. [I believe that your suggestion, that the bees swarmed rather than cross the space between the two stories, is a reasonable explanation. In speaking of scattering or spreading the brood in two stories, if I did not say so I meant that I did so at the time of giving the bees extra room.—ED.]

LAST YEAR the first swarm I had (June 3) was from a powerful colony that had stood all winter in two stories. The only entrance was at the bottom. When each story had an entrance, I think I never knew a colony to swarm after getting fairly to work in more than one story. [The plan of having multiple entrances has been rather ridiculed by the

bee-keeping fraternity; but I am not so sure that the principle is so utterly wrong in theory or practice. Giving more than one entrance at two different points of the hive, perhaps amounts to the same thing as to give one large entrance at the bottom of the hive. Julius Hoffman, the Hoffman-frame man, who operates hundreds of colonies and makes money off his bees, uses an entrance to each story of his hives. One thing I feel quite thoroughly convinced of; and that is, that the fraternity will in time recognize the value either of a large entrance or one or more small ones. This clustering out can and must be avoided.—ED.]

"IS NOT VENTILATION preferable to dead hot air" in a hive-cover?—footnote, page 422. Probably yes, in hot weather; but it's quite important to have a warm cover in cold weather. The dead air is *almost* as good as a ventilated cover in hot weather, and away ahead in cold. A *good* cover ready made should be put on the market for those who feel they must have it and are willing to pay for it. Lately it leaks out that Doolittle has tin covers, and I'm afraid you can't have a good cover without tin. [At one of our warehouse buildings the top floor is a large room. When the windows are shut down, and all the openings closed, and the temperature outside 80 to 100 in the shade it is unbearable in the said room; but when the windows are raised, and a breeze circulates through, it is very comfortable. But perhaps you may argue that a breeze does not change actual temperature. I think it does in this case, because the outside moving air is cooler than the air confined next to the roof above. Take another illustration: You are probably familiar with the ventilating-thimbles that go around the stovepipe when the same passes from a lower to an upper room. You will remember that the flanges separating the outer and inner walls of the thimble are perforated with holes. The object of this is to let the heated air escape so that the cooler air from the room can take its place. I think the same principle holds good in hive-covers.—ED.]



#### PREVENTION OF SWARMING.

A Scheme for Curtailing the Breeding Capacity of the Queen by means of Perforated Zinc.

BY B. F. AVERILL.

A great desideratum of the modern bee-keeper is, especially with those largely interested in this pursuit, a way to control the swarming impulse without detriment to the systematic industrial energies of his bees. To cope successfully with the problem would enable the apiarist to extend largely his operations, and increase the number of out-apiaries

under the management of any given force of employees. A great deal of study has been given toward devising non-swarming methods that would attain that uniformity of result desired. If the apiarist is behind with his affairs at the commencement of the swarming season, and there are indications that many swarms are liable to issue before other means can be adopted, the most favorable plan, if swarms are not wanted, is to run rapidly over the apiary and reduce the strength of each colony making preparations to swarm, until arrangements can be perfected to make the control of the situation complete. In nearly all instances where swarming occurs, the conditions are comparatively the same. That is, where a natural increase of colonies takes place during the swarming season, swarms rarely issue unless the parent colony is in a normal condition preparatory to the event. Any supervision which decides the necessity of manipulation, to disarrange their order of proceedings, can easily be the cause of a delay of their intentions.

Previous to swarming preparations there seems to be a comparison between the cubic capacity of hive they occupy and the numerical force of workers, as age and habit accustom them to the different hive duties with which they naturally choose to be employed. Any plan of management which disrupts the autonomous order of hive government may temporarily or permanently moderate the swarming propensity, in favor of foraging and a surplus of stores. Confinement of the queen reduces the labors of the nursing bees, and makes available for comb-building and the sealing of stores a force of workers that would not undertake those duties nearly so soon under normal conditions. This force relieves those who are comb-builders, and allows them to seek the fields and flowers much earlier than bees of comb-building age, generally forage; and the result is, as is often perceived, an immediate and consequential gain in the amount of honey gathered by a colony under these conditions. My plan enables me to achieve this result, and not entail upon the colony the disadvantage of an excessive restriction of brood-rearing, and consequently forcing a colony to labor under conditions that are not so profitable, ultimately, as the condition under which they would upon the plan I now describe:

When the swarming season approaches, and a colony is indicating its intention to swarm, divide the brood-nest, to each of the two portions giving a selected number of the combs of brood. The combs to be selected, and the proportions of brood in different stages of development to be given the division which retains the queen, must be determined according to the future conduct of operations; also, whether the queen is to occupy the compartment with the entrance, or be relegated to confinement in the rear of the hive, provided against exit to the swarm, should a swarm possibly come forth. When division is made, a perforated zinc division-board is placed in the center of the hive, and perforated zinc strips on top of the frames given the queen. By thus reducing the brood produced by a col-

ony to *just a few points* below the requisite numbers that would augment the swarming propensity, and, after the plan was practically understood, extending the method of management to all the colonies of an apiary, or a system of apiaries, the value of the same will to bee-keepers, I think, be readily perceived.

In working for extracted honey I judge it preferable to give the queen to the compartment with entrance; then the combs in the rear of the hive would be filled with honey, and could be extracted. In working for box honey, more stores would be carried to the supers if the queen occupied the rear of the hive. The principles of this will be apparent to the expert, and I hope some of my bee-keeping friends will experiment successfully along this line, and put the matter in a form that will be comprehensible to the novice.

I fear my explanations are not sufficiently explicit to render the practical adoption of the plan available to those lacking experience, though my first experiments, when testing the plan, were about as successful as those of the season of 1897. But I had thought out the principles involved as a result of many years' observation among the bees.

Howardsville, Va.

[The plan indicated in your next to the last paragraph is just the same as that recommended some years ago by a bee-keeper whose name I have now forgotten. Although it was talked about a good deal at the time, I do not remember that it really accomplished the object desired. My experience rather leads me to believe that, if the queen has been given unlimited room to breed, there is a lessening of the desire to swarm; but if that breeding room is at all curtailed, the swarming propensity is aggravated.—ED.]

#### BEE-KEEPING IN "MERRIE ENGLAND."

##### A Peep at One of the British Apiaries.

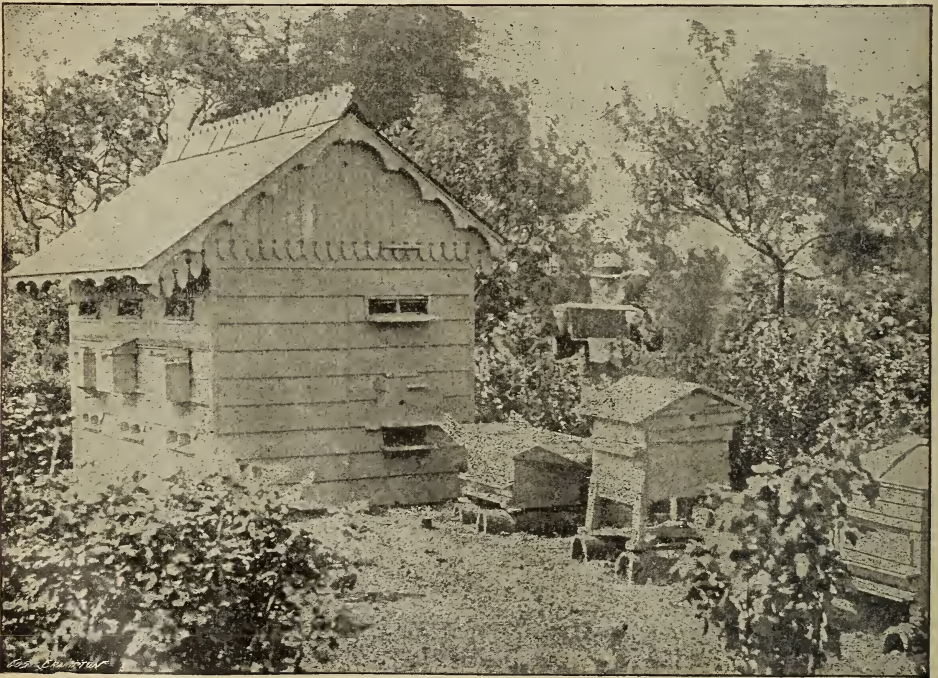
[Of late there have been running, in the *British Bee Journal*, views showing British bee-keeping as it is conducted in the mother country. While there are some things in common, both as to methods and hives, yet there are quite a number of things in which there are differences. The hive architecture—that is, the outside of it—is a little more elaborate than that of American hives. In the generality of cases the hives are mounted on legs standing up a foot or two from the ground, and within working distance of the apiarist. Then there are porticos, porches, and such like things that the American bee-keeper, who numbers his hives by the hundred, can not afford and perhaps would not tolerate.

It should be remembered that bee-keeping in Great Britain is not, as a general rule, conducted on as elaborate a scale as it is in this country. The cottager may have from one to a dozen colonies in his yard. While the apiaries are small, there are more of them—many more of them, perhaps—to the square mile, than in the United States.

The British Bee-keepers' Association, as well as the *Brit. Bee Journal*, encourages every one to keep a few bees. The cottager, with his limited income, is, sometimes, just able to make both ends meet, and hence finds the keeping of a few colonies both a pleasurable and profitable occupation. It gives him the best and most wholesome sweet in the world for his table, and enables him to have a little more of this world's goods than he perhaps otherwise would.

Personally I have been greatly interested in the pictures that have been presented in our esteemed British cotemporary from time to time. Feeling sure there were some views that would interest our own readers, I arranged for an exchange of engravings, and now take pleasure in presenting the first one of the

ers, as well as to those who declare they are "too old" to take up bee-keeping. Always used to an active and busy life, an architect and surveyor by profession, he first began to take an interest in bee-keeping in 1888, when a friend lent him "Cheshire's Practical Bee-keeping." At this time, too, his next-door neighbor, the curate of the parish, commenced to keep bees. At this time Mr. Lister was eighty years of age; and in 1890, nothing daunted by his fourscore and two years, he determined to take up bee-keeping himself. He built himself a hive which was kept in the window of his workshop, with an entrance through the sash for the bees to fly from, and an alighting-board and porch outside. This modest beginning did not long satisfy his aspirations, and after building a hive or two he



APIARY OF WM. LISTER, MORTON, GAINSBOROUGH, ENGLAND.

series—the house-apiary, the hives, and the bee-keeper himself. The interesting and remarkable part regarding this is that the owner began to study bees when he was 82 years old, when most men would feel too feeble and perhaps too ancient to go into some new industry. May he reach and pass the fourscore-and-ten mark. We little know how much an agreeable and pleasant pastime afforded by the study of bees will do sometimes to build up health and prolong life.—Ed.]

Our illustration shows the apiary of a veteran bee-keeper, Mr. Wm. Lister, of Morton, Gainsborough. This gentleman may serve as an example to many of our younger bee-keep-

determined to erect a bee-house, and, with the exception of the asphalt floor, he actually made and erected the capital bee-house shown in our illustration. It measures 10 ft. by 6 ft., and is 6 ft. high to the eaves. The walls are double, with an air-space between, and the roof is matchboarded and felted as well as slated. Two sky-lights are fitted which open outward to allow bees to escape, and shutters are also affixed to darken the interior. Runners to carry single-walled body-boxes are fitted round one side and the end farthest from the door, and sixteen stocks can be thus accommodated in two tiers. On the opposite side of the house is a hinged table for manipulations, and the corner behind the door is fitted as a comb store for 100 frames.

A shelf or so accommodates sundry apparatus, and all carbohc acid and naphthalene in stock is kept here. This will doubtless account for the entire absence of spiders, moths, etc., usually too plentiful in this class of house. Outside of the house the porches are painted various colors, and along one side runners are fixed which carry nucleus hives, so that they may be moved either toward the hive from which they were taken to strengthen them or toward the hive to which it is intended to introduce the new queen. The roof on this side projects 18 in., and so protects these from heavy rains. This bee-house cost in material \$48, and since it was erected all additions by way of outside hives have been discontinued. Every appliance connected with the craft used in the apiary, except smoker and quilts, has been made by our venerable friend himself, even down to the metal ends and frames. The hives proper are constructed entirely upon a novel design of his own. They have the entrances at the top, with a passageway along the front of all the frames. Floor-boards are all loose with wedges under, and can be drawn out in an instant; and a ventilating-hole is bored at the back of the body-box toward the bottom, through which naphthalene is introduced by sliding the perforated zinc on one side. No impervious quilts are used, yet floor-boards are always dry. The bees work well in the hives, and winter well; and the interest and occupation afforded in looking after his bees and ministering to their wants have brightened the eventide of his life and added to its enjoyments in no small degree, besides giving a zest for outdoor occupations marvelous in one who has already entered upon his eighty-eighth year.—*British Bee Journal*.

#### FACING APPLES AND HONEY.

A Practice Encouraged by the Dealer and Commission House rather than by the Producer.

BY W. S. FULTZ.

*Editor Gleanings*:—At the present time there is considerable controversy in GLEANINGS over Doolittle's assertion that it is not wrong to face honey, apples, and other things when put up for sale. Without going into the merits or demerits of the question, I should like some of those persons who are criticising Doolittle to tell us who is to blame for this habit of facing. Is it those who do the facing or is it those who handle the product and make sale of it? I have been in the fruit business for about 25 years, and I learned several years ago that the trade—yes, and consumers too—will buy the best-appearing packages of fruit; and the fruit that is faced with the nicest specimens always has the readiest sale at the best price.

When I first entered the fruit business I thought it was dishonest to face fruit that was offered for sale, and particularly so when selling in the home market; but I soon found that, if I wished to succeed, I must do as others did, for purchasers were inclined to take the appearance of the fruit to judge by,

and that the eye was the only thing that it was necessary to please when a sale was to be made.

Last summer, apples were so plentiful here that they went begging at 15 cts. per bushel, and as I had over 400 bushels I knew that I should have to find a market somewhere else, or my apples would go to loss. I sent a trial shipment by steamboat to St. Paul, and realized 47 cents per bushel net. During the summer I sent 120 barrels to St. Paul, and they averaged me \$1.20 per barrel net. All of those apples were faced with the nicest, and the only trouble was that I could not supply the demand that I had for apples. When I was sending my Dutchess apples, one of my neighbors asked me to allow him to put five barrels of the same kind of apples with mine. This I would not do, but I allowed him to ship his when I shipped mine, making two consignments. When the returns came I had \$1.20 net per barrel, and was asked to send more. My neighbor had 40 cents net per barrel, and was told that his apples did not sell well because they were not faced. His apples were just as nice as mine. I got well paid for all my labor and trouble, and he nearly gave his apples away, just because they were not faced.

A few days later, when I was preparing my Wealthy apples for shipment, another neighbor brought ten barrels of Wealthy, and wanted to send with mine. I asked him if his apples were faced, and he said they were not. I told him of the former shipment, and advised him to repack and face them, but he thought that would not pay. So I advised him to get a commission merchant in town to send his apples, and he did so, his apples and mine going on the same boat. When the returns came I had \$1.20 per barrel, and the other man had 30 cents per barrel, and was told to face his apples if he sent any more.

One of our dealers in Muscatine told me that he bought and shipped 6500 barrels of apples last fall, and that they faced them with selected apples, and that he had bought about 200 barrels from a farmer that were packed by the farmer in the orchard. When these 200 barrels reached their destination they were opened and found to be not faced, and were rejected. It cost the farmer \$80 to have those apples repacked and properly faced.

As long as the public demands that honey, fruit, and other products shall be put up in attractive shape, and that appearance alone shall be the criterion to go by, packages will be put up that way. When the public demands that all products shall be properly sorted, and that only those of a certain grade shall go in the same package, then they will be put on the market that way. There is no intention of dishonesty in bee-keepers facing their honey, or of fruit-growers in facing their fruit. They do it because the trade demands it; and as soon as trade demands some other method, producers will cater to that demand.

Muscatine, Ia., May 20.

[Some of our friends may think it a little strange that I have allowed this discussion to

be reopened since I said it must close in the previous issue of GLEANINGS; but as Doolittle received a shower of hot shot, and as there was almost no one to defend him, I think it no more than fair that I should print the foregoing, especially as I believe it explains who is responsible in the first place. In doing so I do not in any sense indorse the practice spoken of, whether by the producer or bee-keeper. In speaking of Doolittle, another correspondent, in a private letter, writes: "Doolittle, in an unguarded moment, made the statement that the horse was 16 feet high, and being afflicted, like the most of us, with a quality better known as stubbornness, still sticks to his original statement. Now, notwithstanding all this, I like him. He is not at all what his name indicates. If he has any thing to say, he says it; and if he has any thing to do, he does it. These are qualities that make up representative men. I should like to meet him, as well as the other prominent bee-keepers whom I know only through the bee-journals."—ED.]

#### ONE WAY OF UNCAPPING.

How the Operation is Performed in the Apiaries of one of the Most Extensive Bee-keepers in the World; the Nuisance of Staples and Other Metal Spacers on Frames during the Uncapping Operation.

BY HARRY S. HOWE.

*Mr. Editor:*—The task you have set for me is a rather hard one. It is very much easier to show how to uncap than to tell how, and showing does not always make it clear to the beginner.

It has fallen to my lot to try to teach several "greenhorns" to use the uncapping-knife. Some of them would "catch on" at once; others never did, nor do I think they ever would, even if they cut up all the comb in three counties.

When Mr. Coggs shall and I work together he usually "takes off" while I uncap and extract—not so much because I can extract faster than he can, as it is because he can "take off" faster than I can. When I go out with a green hand, the object is to make his day's work bring the best returns. Working upon this theory it does not pay to have the green man uncap—at least not to any great extent.

There are few pieces of work among the bees where an expert will beat a beginner by a larger per cent than he will in uncapping, which seems to call for more of the "slight of hand" than the other work; yet the motion of using the knife, like the motion used to jerk the bees off the combs, once learned, seems so easy that one wonders why every one can not do as well at it. So much for the preamble; now for the machinery.

All of my honey-houses are arranged on the same plan as nearly as possible. This plan is arranged so that the work may be done with as few motions and as little work as possible.

Some people seem to work just for the fun of it. I don't. Results are what pay the bills.

The filled frames in the carry-alls are placed on the stand, facing the operator. We will assume that the honey is all capped—that is, that all the combs have some capped honey in them, ranging from the outside combs with just a strip in the middle to combs that are capped all over. The operator picks up the first one by the top-bar, and places it on the rest to the capping-can. The frame is stood on one of the staples that are driven into the end of the bottom-bar, and grasped by the opposite end of the top-bar in such a way that it may be put in any position; and when one side is cut off it is whirled around the other side to, without having to be lifted.

Commencing at the bottom, the cappings are cut with a quick drawing or slightly sawing motion. About two sweeps lengthwise of the frame will usually clean a side. Then a slight twist whirls the comb around ready for the other side. As the last cut is made, the comb is brought down to a horizontal position ready to go into the extractor. All of my extractors take the frames in a horizontal position. When the combs are uneven, of course it takes some extra digging with the point of the knife to clean them. After they have been through the extractor a few times they will be level. Where the combs are only partially capped, one sweep of the knife does it.

To cut nicely, give the knife a slight drawing motion, about as a barber uses a razor. Once in a while one strikes a batch that will not cut nicely; then smaller cuts and more of them are required.

After trying all kinds of capping-knives I have come to use only the Bingham, principally because they seem to stand better. To do good work the knife must be kept very sharp. I always use the knife cold, washing it off only once in a while to sharpen it on a fine-grained stone.

Wire staples for self-spacers and all that sort of thing cost more time in uncapping than they save in spacing, especially where only nine frames are used in a ten-frame super.

I uncap only as fast as the combs are extracted, and once in a while not so fast as the extractor could be run.

Uncapping is the most disagreeable part of bee work to me, perhaps because it can not be rushed. When the combs are all capped I can not cut off the cappings as fast as a good man can take off or extract, and it does not pay to have two men stand and wait for one. As a result I have given considerable thought to rapid methods of uncapping. My last capping-can is a 14-qt. tin pail with a deep dishpan punched full of holes that will just go down into it. Across the top of the dishpan is a strip of wood three inches wide to rest the frame on while working. The whole outfit is put on a stand that brings it up just so a man can stand up to work.

There are several other styles of can that are equally good.

One thing to be considered is, how thick a shaving to take off. This depends upon the state of the honey. When it is cold, just tak-

ing off the capping seems to go pretty well. When it is very warm and the honey is thin, quite a slice of the top of the cells makes the best time. Practice alone will tell which is best, every time. The combs must be left level, any way.

As a parting warning I will say, don't lick off the honey-knife. There is a story current in Groton that Niver once did, with results that all who know him will never forget. So, *don't*.

Ithaca, N. Y.

[A short time ago a correspondent wished to tell me in detail just how Mr. Coggs shall does his uncapping. As I knew that Mr. C. could tell it better than I, I referred the inquiry to him, requesting that he write it up for GLEANINGS. But it seems the latter again referred it to his right-hand man, Mr. Howe, a schoolteacher, who is more "used to writing for print." I would state, in addition, that a great deal of Mr. Coggs shall's buckwheat honey is so very thick in the combs that it is thrown out of the extractor before the bees have time to cap all of it; at least, the combs that were taken out the day I visited one of his yards were, about 75 per cent of them, put into the extractor without uncapping, for, indeed, there was no uncapping to be done; and the honey—well, I should say it would run nearly 12 lbs. to the gallon. I believe Mr. Coggs shall extracts the combs, not necessarily when they are all capped over, or largely so, but when the honey in them has reached the proper consistency, while at some seasons, and particularly in the case of honey from some sources, he finds it necessary to wait till the combs are capped. About those metal spacers and the uncapping-knife. Dr. Miller will please take notice of what Mr. Howe says.—Ed.]

## THE MOSQUITO-HAWK, AND THE HARM IT DOES TO BEES.

BY A. J. WRIGHT.

What may be strictly true in one locality may be strictly untrue in another. A knowledge of this fact, and a desire to prevent the wholesale slaughter of what I consider a very valuable insect, impels me to write the following:

An article with the above title appeared in March 15th GLEANINGS. I assume that the writer, in using the term "mosquito-hawk," referred to what is known among naturalists as the dragon-fly. I should feel badly indeed if I believed that the article in question should induce every bee-keeper who reads the same to kill on an average 100 dragon-flies per day for two months (a total of 6000), as the writer of said article avers he has done. Now, I do not wish to be understood as questioning in any way the truthfulness of the statements made in the article referred to, as I do not know what the heated atmosphere of Florida may be capable of producing in the way of dragon-flies; but during a long and pleasant acquaintance with this truly beautiful and in-

teresting insect I have never known him to be guilty of any act detrimental to the interests of mankind.

My apiary and residence are but a few rods from the outlet of a small lake. This outlet widens into a marsh covering hundreds of acres, and produces annually thousands of dragon-flies and millions of their natural food, mosquitoes. I have seen the dragon-fly in all stages of development, from the egg to the adult insect. I have seen him as a larva clinging to the water-lily stalks; I have seen him as a pupa on the muddy bottom and among the eel-grass of the marsh; I have seen him later in this same pupa state upon a water-lily leaf going through a series of contortions to free himself from the outer skin, from which he emerges a very king of insects, clothed in purple and gold, with transparent silvery wings, dashing through the air so quickly as almost to elude the eye. I have watched him by the hour in the apiary among thousands of flying bees, and have never known him to interfere with them in any way; and I should require strong evidence to convince me that he ever eats a honey-bee, or, under the name of darning-needle, sews up the ears of naughty boys and girls. But here he comes; let us watch him for a time; possibly he may furnish the evidence to convict himself. He is now in the apiary, and seems to remain motionless in the air. He now makes a sudden dash, and you next see him darting downward over the strawberry-bed, and sad havoc he is making in that swarm of mosquitoes and gnats, darting rapidly back and forth; and now, joined by another of his kind, both literally fill their arms with the soft-bodied insects, and then retire to enjoy their well-earned supper. It is now after sunset, and the dragon-flies have greatly increased in number, while the swarm of mosquitoes and small flies has disappeared. What is the cause of that small cloud of dust, and that rustling noise over there among the grass? My bee-keeper friend, it is a bee-moth struggling in the grasp of a dragon-fly, and this is only one among hundreds that will perish in the same way before the setting of another sun.

In conclusion, I do not believe the dragon-fly, or mosquito-hawk, of northern localities, is an enemy to bees; and I believe that earnest investigation will prove him a friend; and the object of this article will be attained if this beautiful insect is accorded a fair and impartial trial upon its merits.

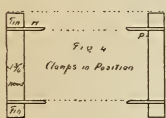
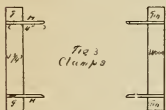
Bradford, N. Y.

## APPARATUS FOR FOLDING PAPER TRAYS FOR COMB-HONEY SHIPPING-CASES.

BY WM. MUTH-RASMUSSEN.

A few years ago I asked G. M. Doolittle if he knew of any better way of making the paper trays than by folding over a square-cornered board. I had then already invented and used the device described below; but I thought that he or some one else might know of something better. I had particularly in mind the folding of the corners of a common

dripping-pan, supposing that it is done by some kind of press or stamp, but have never seen it. Mr. Doolittle answered in GLEANINGS that he knew of no other way than the old one which he has several times described.



Another stick,  $\frac{3}{8} \times \frac{3}{8} \times 14$ , is fastened in the same position at I. The gauge, A B, is made of two pieces, each  $\frac{3}{8}$  thick and  $17\frac{1}{2}$  long. A is 1 in. and B 2 in. wide. They are hinged together as shown at M M, in Fig. 1. Small tin hinges can be cut out of tin. Tobacco-boxes with hinged covers are inexpensive, and answer the purpose. They are fastened with  $\frac{1}{2}$ -inch wire nails, clinched on the under side. A stick,  $\frac{3}{8} \times \frac{3}{8} \times 3$ , is nailed on the end of B, at C.

The folding-plate, Fig. 2, consists of a sheet of tin, D D, about  $11\frac{3}{8} \times 17\frac{3}{8}$ , cut so that it will fit easily into a shipping-case. The edges and corners of the tin plate, as well as of the tin part of the clamps, should be smoothed off with a file to prevent them from cutting through the paper. A  $\frac{3}{8}$ -in. board, E,  $3\frac{1}{2}$  in. smaller each way than the tin plate, is fastened to this with wire nails, clinched on the upper side of the board. This leaves the tin plate projecting  $1\frac{3}{4}$  in. all around the edges of the board. A short piece of broomstick, for a handle, is fastened at L, by a screw, inserted from the under side. A corresponding hole is cut in the tin, so that the screw may be tightened if it should get loose.

Each clamp, Fig. 3, is made of a strip of tin, F F,  $1\frac{3}{4}$  in. wide and  $11\frac{1}{2}$  long, or  $\frac{1}{4}$  shorter than the width of the folding-plate. A strip of wood, G,  $\frac{3}{8}$  thick,  $1\frac{3}{4}$  wide, and not quite as long as the width of the board E, is fastened with wire nails to the tin strip, equidistant from both ends. On each end of this strip of wood is nailed a piece of section,  $\frac{3}{8}$  wide and 4 in. long, rounded at the inside corner of the projecting end, as shown at H, Fig. 3.

To begin with, place a sheet of paper, such

as comes with the shipping-cases, on the folding-board, letting two adjoining edges rest against the stops I and K. Place the folding-plate on the paper, and adjust it so that the paper will project evenly all around the edges of the tin plate. Now lay the hinged gauge, A B, against the edge of the tin plate so that the further left-hand corner of the plate will fit snugly into the angle at N, Fig. 1. Fasten the strip A to the folding-board with 1-in. wire nails, and the apparatus is ready for use.

#### FOLDING.

Lay a sheet of paper, as before, on the folding-board, against the stops I and K. Drop the gauge B on the paper, and hold it down while you put the folding-plate in position, the edge of the plate resting against the gauge, and into the angle at N. Place a 10-lb. weight (I use a brick-shaped piece of iron set up on edge) on the folding-plate, to keep it from moving, and in doing so press firmly on the plate to prevent it from slipping while you put the weight on. As soon as the weight is in position, take hold of the corner-piece C and throw the gauge B back, letting it rest on A.

Now fold the two short edges of the paper (at your right and left hand) over the edges of the folding-plate, smoothing down the folds with the thumb-nails. As soon as folded, slip the clamps over the folded parts of the paper, letting the strips H H grasp the edges of the board E (that is nailed on the folding-plate), as shown in Fig. 4, where the folding-plate is indicated by dotted lines. In Fig. 4 it will also be seen that the clamps are  $\frac{1}{2}$  in. shorter at each end than the width of the folding-plate. This is in order that the clamps may not interfere with the folding of the long edges of the paper.

Now fold one of the long edges of the paper over the tin plate, smoothing it down as before. Raise the folded edge of the paper to a vertical position. At each end of this fold you will now have a kind of pocket formed by the long fold of the paper, and a little square piece projecting from under the end of the clamp. For the right-hand corner stick a finger of the left hand into this pocket and open it. Then press the short vertical corner fold down, so that it lies exactly over the long edge of the tin plate. With the thumbnail of the right hand make a diagonal fold, beginning at the corner and running toward the center of the folding-plate, as at O P, Fig. 4. This fold will be at an exact angle of  $45^\circ$  with the other folds. In making this diagonal fold, be careful not to fold or crease that part of the paper which forms the long side of the tray. When the tray is finished, the folded corner turns back behind the short side, and all four sides will be smooth, straight, and square in the corners.

Proceed in the reverse order with the left-hand corner (using the finger of the right hand to open the pocket); and when this is done, fold the opposite long edge of the paper in the same manner. When all the folds are made, open out and smooth down the long folds; remove the clamps; open and smooth

down the end folds (that were under the clamps); lay the weight aside; lift the folding-plate off, and finally place the paper on a board of the same size, laying other papers, as you proceed, on top of this, until you have a pile of trays ready for use, easily moved, or readily covered up to protect them from dust, if they are not wanted immediately.

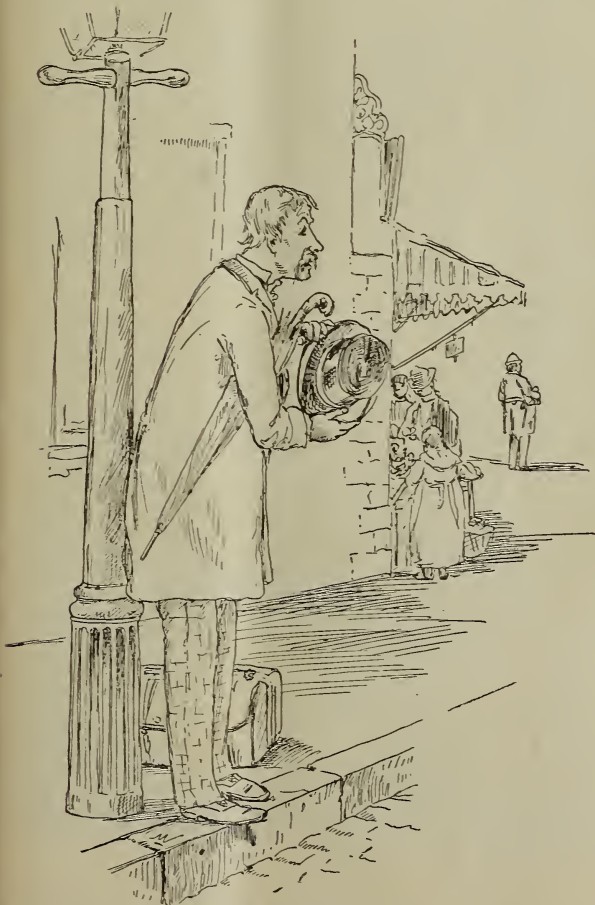
Independence, Cal.

#### RAMBLE NO. 147.

At Geo. W. Brodbeck's.

BY RAMBLER.

But midst the crowd, the hum, the shock of men,  
To hear, to see, to feel, and to possess,  
And roam along, the world's tired denizen,  
With none to bless us, none whom we can bless;  
Minions of splendor shrinking from distress,  
None that with kindred consciousness endued,  
If we were not, would seem to smile the less,  
Of all that flattered, followed, sought, and sued,  
This is to be alone; this, this is solitude.



The writer of this has many times and in many cities felt this same solitude. There is a throng on the street, the rattle and animation of business; still, to the stranger in a strange city there come lonesome moments;

and if there has ever been a symptom of homesickness with me it has been over the memory of the dear kind neighbors in the old home beyond the mountains. The difference is this: In the old home we have all grown up together; our joys and sorrows have been the same; we have been tried by a test of many years, and there is confidence placed in our words and acts according as those acts have been to truth and sobriety. But in one of these far western cities there is scarcely a person who has grown to manhood in any of them. They are gathered from the four quarters of the earth—all nationalities, colors, creeds, and dispositions. If there is a general selfishness manifested by the inhabitants it is for self-protection. We know not the antecedents of our neighbor; and we often suddenly find, after having given him our confidence, that the pleasing exterior hides an arrant scoundrel. Under these circumstances many make new acquaintances slowly, and but few of them.

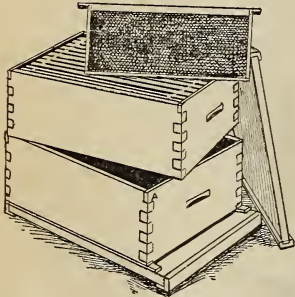
In a two-years' residence, however, in one place, any person will find many kindred spirits; and so in this city I have found many good people; and one of my most valued friends, and one who gave the Rambler a cordial welcome when he arrived in Southern California, is Mr. Geo. W. Brodbeck.

Mr. Brodbeck removed from Indiana to California about eleven years ago. He was interested in bees in the East, and, though he engaged in mercantile business when he came to this city, as with all enthusiastic bee-men the hum of the insect was constantly in his ears. Mr. Brodbeck soon cultivated the acquaintance of bee-keepers, and was the leading spirit in the organization of the Southern California Bee-keepers' Association. It was a success as a local association, but there were quite a number of bee-keepers who thought it would have more influence if it could embrace the whole State, and it was accordingly changed to a State association in 1892, and Mr. Brodbeck's efforts have been untiring in the interests of the organization. Finding the confinement to business matters detrimental to health he retired from mercantile pursuits, and for the past three or four years has devoted himself almost entirely to bee-keeping.

It is an easy matter to pick up colonies of bees in this city. The hundred colonies, more or less, that are in houses, will swarm, and people will have them in all sorts of boxes; and during the swarming season they can be purchased very cheaply. When a score or more are secured and transferred to good hives they can be increased rapidly. With

these facts in mind, and being industrious, like the bee, Mr. Brodbeck soon had a respectable apiary.

Bees are not allowed within the city limits; but there is no law to prevent the location of an apiary on the border, where they can get the benefit of the shade-tree pasturage, which is of value here in the city. In locating an apiary near the city, the factor of land value comes in. The bee-keeper can not spread his apiary over valuable land. The rent would be more than the ordinary bee-keeper could pay and retain a profit. Therefore Mr. Brodbeck's apiary is located in narrow quarters, and close to one of those little eucalyptus groves so common in and near the city. The reader will observe from a mere glance at the picture herewith presented that Mr. B. is a scientific bee-keeper.



BRODBECK'S HIVE.

A hive in this hot climate warps less and lasts longer if kept well painted; and while in some localities an unpainted hive may be desirable, here such hives will absorb heat and melt the combs, many times, where a hive painted white will save them.

Mr. Brodbeck uses white lead and the brush freely; and as he dispenses with those unsightly rocks that nearly all California bee-keepers think a necessary adjunct to the hive-cover, his apiary presents a neat appearance.

After putting together all of the pros and cons that enter into the successful production of honey, Mr. B. has adopted a hive that takes a Hoffman frame 16½ inches in length and 7 inches in depth. Nine of these frames and a division-board fit the hive. His reasoning and Mr. Danzenbaker's seem to run along the same line, which again verifies the old adage about "great minds." The Rambler suggested to Mr. B. that he might as well adopt the Heddon hive and done with it, and use the best hive extant. But our friend resented the advice; and in order to have peace in the family the matter was not pressed. It is my opinion, however, that Mr. B. got just as near to the Heddon hive as he could and not infringe on the patent. We always have a quarrel over this matter, and probably the matter will never be adjusted between us. In the construction of the hive itself Mr. B. has made a very neat improvement in the lock corner. The upper projection on the sides of the hive is shortened so as to fit against the thin portion rabbeted out for the frame-support. This insures the better nailing of the thin portion of the end, and a thorough nailing is necessary in this climate to prevent the warping of the corners. This improvement has been adopted by both of our local hive-manufactur-

ers, and meets with the general approval of bee-keepers who use the lock-corner hives.

Mr. B. has made several other little improvements and short cuts in the management of bees. His sun extractor is a little different from the general order, in having a deep receptacle at the end for the honey and wax to collect. The honey in such a receptacle is not much colored by the heat of the sun, and this is a desirable point gained.

The Hoffman frame was adopted in this apiary from the fact that the apiary was to be worked on the migratory plan. While the city location is excellent for the wintering of bees and for building up an apiary, it is not a good location during the summer months unless there has been a light rainfall. In the latter event the bees are not sent into the rural wilds. They are better off in the city.

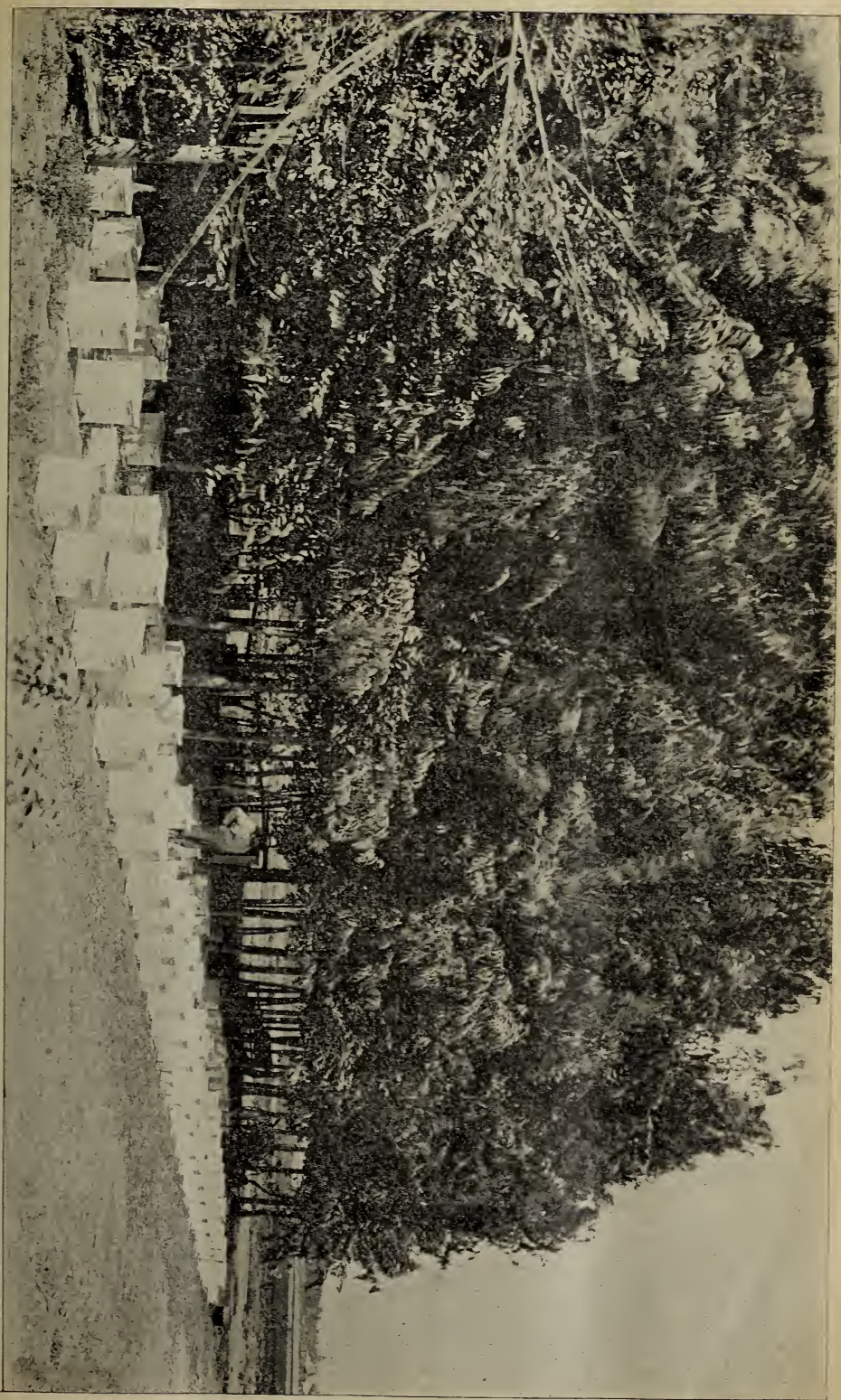
Like all extensive bee-keepers, Mr. B. has an accumulation of bee-fixings, and his shop is a very pleasant place in which to spend an hour; as the old adage has it, "Everything is in apple-pie order." It may take time and much puttering to keep things so, but in the end we believe that it pays better than to follow the careless and slipshod method.

Although Mr. B. is an all-round enthusiastic bee-keeper he does not allow that to interfere with his various fads, the principal of which is English terriers. He claims to have the best-bred dogs on the continent, also claims they are the best-behaved canines in the city. He vigorously resents my assertion that they are cross bull pups. I will compromise the matter, however, and call them terrors. Witness my experience.



BRODBECK'S TERRORS.

One day I visited the before-mentioned shop. As I approached there was a rattling of materials within; and, thinking to surprise Mr. B., whom I supposed was at work within, I put my face to the little window, and shout-



G. W. BRODBECK'S APIARY, LOS ANGELES, CAL.

ed, "Hello, Bro.—" But I stopped right there. One of those terrors shut his teeth together with a venomous snarl and howl just in front of my face. The terror had evidently been left on guard duty, and performed it well, and would have performed some more if it had gotten through the window. I had no desire to enter the shop; but seeing that the door was well secured I made the terror earn a whole day's rations. I will admit it was a mean advantage I took on the dog to poke sticks through the cracks of the door; but, of course, he was there for guard duty; and had I not stirred him or her up, there would have been no realizing sense of it.

In my next I will show how Mr. B. moves his bees, his method of managing an out-apiary, also some more about the terrors.



#### TOO MUCH POLLEN IN COMBS; WHAT USE TO MAKE OF IT.

*Question.*—Some of the combs in my hives are so full of pollen that there is no room for either brood or honey. The wild (or frost) grape abounds here, and there is also an abundance of sorrel, from both of which the bees fill their combs with pollen to an extent that seems detrimental to the welfare of the colony. Do you think such gathering of pollen a disadvantage to the bees? and if so, will you tell us through GLEANINGS what can be done to remedy the matter?

*Answer.*—In some localities bees store so much pollen in their combs that it seems to those not as familiar with the inside workings of the hive as they might be that some device for removing this pollen would be of great benefit to them; in fact, some are so sure that such removal would be of enough benefit to them to warrant their offering as high as \$25 for some plan to effectually remove pollen from the combs without materially injuring the same, as I once heard at one of the bee-conventions. Then some advise making combs containing much pollen into wax, and then working the wax over into comb foundation to put into the hive for the bees to draw out into comb again, but all such advice seems to me to be a damage rather than a help. In this locality we get large quantities of pollen, probably as much as is gathered in any place in the United States, yet I have never melted up a comb on that account, nor would I give a cent for the best machine that could be invented for its removal. Some claim that, where too much pollen is stored in combs, the bees remove it and tumble it out at the entrance; but I am inclined to think that they mistake that which is sometimes dislodged from the pollen-baskets of the bees at certain hives having too small an entrance, for that which is removed from the combs, as in all of

my experience I have never known any to be thus thrown out unless said pollen had become moldy.

With me there are two different periods when the bees store for a short time much more pollen than is worked by the nurse bees into chyme for the young brood. One is during the bloom of hard maple, and the other during white-clover bloom. I have had combs of pollen gathered during the yield from hard or sugar maple, which weighed as high as four pounds. At such times as this I often work as follows:

Whenever the bees gather so much as to crowd the queen I draw the frames filled with pollen back away from the brood, and place such frames as may contain honey which are in the hive between these frames and the brood, thus causing great activity with the bees in changing things back as they wish them again, the result of which is the converting of both pollen and honey into brood much faster than would have resulted had things been left as they were. If the brood has increased enough so that this and the combs of pollen fill the hives, then the combs of pollen are taken away for the time being, and empty combs put in their stead. If there come a few rainy or windy days at this time, I find that what seemed to be a damaging amount of pollen is all exhausted, so that the cells are once more empty or filled with eggs, as it takes large quantities of food for the brood at this season of the year. After apple-bloom there is little for the bees to work on, and the surplus pollen is soon worked up into brood, and more needed, when I set back that which was removed, and thus brood-rearing is kept up more effectively than by feeding syrup or honey, or any of the many plans for stimulative feeding. I consider plenty of pollen in the combs during the period of scarcity between apple and clover bloom of great advantage.

The pollen gathered during white clover is treated differently by the bees from that gathered early. The latter rarely ever has honey placed on top of it, while that from clover is placed in the cells till they are nearly three-quarters full, when the cell is filled with honey, and sealed over so as to preserve it against a time of need during the latter part of winter and early spring. During the summer, as we find combs containing much pollen in this preserved state they are hung away in our room for storing combs, and sulphured as occasion may require, to kill the larvæ of the wax-moth, which are sure to injure such combs much if not thus treated. Combs containing pollen under honey are readily distinguished from those without by holding them up before a strong light and looking through them, especially so if the combs are new, or nearly so.

When spring opens I again take the opportunity of placing near the brood all combs I have on hand containing pollen, and find that this answers a better purpose to stimulate brood-rearing at this time of year than the feeding of rye, oat, or any other meal, as is so often recommended by many of the fraternity. In this way all pollen is used up to a far bet-

ter advantage than the inventing of machines for its removal from the combs, and is a great saving in many ways above the melting of the combs entirely, as some still persist in advising.

But until you become familiar with these ways of working it is not best to become self-conceited in these matters, lest you find yourself in the position of a certain preacher I once heard about, who had a way of promising to preach, and on beginning would say something similar to this: "I have been too busy to prepare a sermon; but if some one will kindly give me a text I'll preach from it." A certain friend of his determined to cure him, so invited him to preach. The invitation was accepted. When the time came he began his usual introduction: "Brethren, I have been so pushed for time since I received the invitation that I have been quite unable to prepare a sermon. But if some one in the audience will kindly give me a text I'll preach from it. Perhaps my brother here," turning to the plotter near him, "will suggest a text."

"Yes, brother," came the ready response; "I will do so. You will find the text I wish preached from in the last part of the ninth verse of the first chapter of Ezra, and the words are, 'nine and twenty knives.'"

There was a pause quite long drawn out, as the preacher found his text. He read it aloud, "Nine and twenty knives," and began at once. "Notice the number of these knives—just exactly nine and twenty; not thirty, not eight and twenty. There were no more and no less than nine and twenty knives." A pause—a long pause. Then slowly and emphatically, "Nine and twenty knives." A longer pause. Then, meditatively, "Nine and twenty knives." Again he rested. "Nine and twenty knives." A dead stop. "Nine and twenty knives; and if there were nine hundred and twenty knives I could not say another word."



#### A SWARM THAT RETURNED TO A HIVE WITH A CLIPPED QUEEN; A FAIR QUESTION.

When a colony that has a clipped queen casts a swarm when no one is present to hive them, they will return into the hive from which they came. Now, what should be done to prevent further swarming, for I understand they will swarm again in a day or so?

Flora, Ill., May 28.

G. J. STURM.

[Usually an attendant is present, and will give notice that this or that hive cast a swarm, and that the bees subsequently returned. It is true, as you say, that if a colony has once *tried* to swarm it will try it again. Indeed, it may keep on trying, and fool away the best part or all of the honey season, while the other colonies are busy in the supers. As soon as I know that a swarm has returned and gone

back into the hive, I take away the parent hive and put another with frames of foundation (or empty combs) on the old stand. I now shake two-thirds of the bees in front of the entrance of the new hive on the old stand. I next place the super that was on the old hive on the new one. Last of all, I carry the old colony with the few bees to another location, and contract the entrance. The new hives with frames of foundation will probably cure the swarming mania.

If possible, the transfer of hives should take place while the swarm is in the air. An attendant can do this as well as the experienced bee-keeper; then when the bees return they are ready for business.—ED.]

#### EIGHT OR TEN FRAME HIVES—WHICH? THE EDITOR ASKED TO COME OUT SQUARE ON THE QUESTION.

*Mr. Root:*—I think you had better acknowledge what you believe in regard to the eight-frame "Langstroth" double brood-chamber. While your position does not affect any who carefully read your writings, especially between the lines, beginners and those who do not follow your teachings very closely think that you recommend eight frames for brood. Why don't you come out plain, and say what you believe and what A. I. R. used to teach, that ten Langstroth frames or their equivalent is a good compromise between large versus small brood-chambers?

GLEANINGS certainly took a wrong step years ago in recommending eight-frame hives for comb honey. Two or three or even more eight-frame stories may be all right for extracted honey; but for comb honey the trouble is in getting the sixteen frames crammed full of bees and brood, especially before the surplus season; and you in editorial, p. 400, as well as others, acknowledge the difficulty.

Ten frames are as many as most of us succeed in getting; and the general opinion of apicultural writers, with but few exceptions, is that eight brood-frames are not enough, and then we have the excessive swarming to contend with.

H. H. MCKINNEY.

Renfrew, Pa., May 30.

[I do not know but I am like Dr. Miller—I don't know which is better—the eight or ten frame. I know this: That the eight-frame with single brood-chamber is not nearly large enough. I am pretty well satisfied, also, that the ten-frame is too small. I am not sure that a twelve-frame Langstroth brood-nest is large enough. An eight-frame body is plenty heavy enough to lift when it is full of honey; and I am almost inclined to believe that two eights—that is, 16 frames in all—are none too big for a brood-nest; but ten-framers would be too large. No, I prefer an eight-frame to a ten-frame; and I think I should prefer a twelve-frame to a ten-frame; but if a twelve-frame is too small, then I should rather have two eight-frames.

You seem to feel that I *know* that a ten-frame is better than an eight-frame, but that I am *afraid* to say it. If I really *believed* that a ten-frame were the right thing I would talk

ten-frame and not two eight-framers as I have been doing. I still favor an eight-frame, but only in *pairs*. Now, if this is not square enough I do not know how I can make it any "squarer."—ED.]

#### GOOD NEWS FROM FLORIDA.

*Friend Root* :—My bees are fairly tumbling over each other, carrying in palmetto honey. One colony carried in 78 lbs. in 11 days. Others have done as well, perhaps; some I did not weigh did better. I have taken 1000 lbs. from 19 colonies in a few days. This supplies home demand for the present. Can you tell me where to ship it? The prospect is, this flow will last six weeks yet, and then will follow the mangrove and cabbage palmetto. What we get now is the small scrub palmetto. It is the finest honey I have had—white clover, orange bloom, and basswood not excepted.

There has been very little rain for months, consequently our honey is very thick and high-flavored. I am situated between Sarasota and Palma Sola Bays, five miles southwest of Braidentown. I think it is about as good a location for an apiary as can be found. I manage to retail honey here at 75 cents a gallon by peddling from house to house.

I was at Palma Sola postoffice the other day. We had a laugh about A. I. R. His "How old are you, sis?" is married, and her husband is carrying the mail.

FRANCIS TRUEBLOOD.

Braidentown, Fla., May 20.

[We are very glad indeed to hear you are getting some honey. It sounds a little like old times; and, if I am correct, this comes from the special locality where I was impressed so strongly that it was the place for the bee-keeper to locate; and I am specially anxious to know how the mangrove yields in your locality. If you should ever see my "little girl," please give her my regards. Tell her husband that I congratulate him, and that I hope he will take good care of her.—A. I. R.]

#### HOW TO CUT FOUNDATION; FACING HONEY; T SUPERS AND SECTION-HOLDERS.

When you want to cut foundation to any size, just make a box without top or ends, and of a width and length that will hold your sheets of foundation. Cut saw-kerfs on both sides of your box, from top of side boards down to the bottom board, and as far apart as the length of the cuts of foundation you want to make. When done it will look like a carpenter's miter-box, with the exception that the saw-cuts will be opposite. Then take a hand-saw and grind the back of the blade to a keen edge; place your sheets of foundation in the box, your saw in the kerfs already made, and go ahead.

In crating honey, tying up wool, putting down carpets, putting a patch on your coat, if you don't put the best side out, which side *will* you put out? The man who would put his best apples, potatoes, etc., in the middle of the barrel, his worst and poorest wool on the outside of his fleece, and his best honey in

the middle of the crate, may have a clear conscience, but he will be classed as a fool by business men.

Stop your jawing about the merits of the section-holder and the T super; let the people have just which they want. If you *will*, I won't take either.

Lightning operators must be getting to be a fad. Say, Rambler, about how long would one of those lightning splitters kick around among some of that Cyprian blood you sometimes find in California?

M. W. SHEPHERD.

Mannville, Fla., May 19.

#### THE PEPPER-TREE, AGAIN.

In GLEANINGS for May 1st I find a mistake that was evidently made in the printers' hands. You head the article in relation to the pepper-tree as follows: "The Eucalyptus (or Pepper) Tree." Now, the pepper-tree is no relation whatever to the eucalyptus. It is a distinct species; and I am sure that, in my description, I did not mention the latter. The article would lead the reader to believe they are one and the same.

We are having a glorious rain in this northern portion of the State. I hardly think it reaches the southern portion; and even if it does, it will hardly do much good except to very late honey-plants. This portion of the State always has more rain than they do in the South.

J. H. MARTIN.

Oro Fino, Cal., May 21.

[The heading to the copy you sent had only "Pepper-tree;" but A. I. R., who put on the footnote, must have penciled on the galley-proof the word "Eucalyptus," which should not have been there; hence the mistake. See answer to R. Wilkin in June 1st issue.—ED.]

#### HOW TO DISTINGUISH SUPERSEDING CELLS FROM SWARM CELLS.

Kindly state how to distinguish queen-cells being built for superseding an old queen, from those built when the bees are about to swarm; also when a hive has an old queen and a virgin queen, as is the case with one of mine, what had better be done—leave them to take care of themselves, or divide? My object is to have one hive as strong as possible, to secure the largest amount of honey.

Asheville, N. C.

C. E. MOODY.

[If there is any way of distinguishing the two classes of cells, I must say I do not know upon what basis the distinction is made, except that swarm-cells are usually large, like great big peanuts. While superseding cells *may be* just as large, they are more inclined to be smaller. If cells are started when there is already an old queen in the hive, and it is *not* during the swarming season, I assume that the cells, if present, are of the superseding kind. If, on the other hand, the queen is not over two years old, and cells were started during the swarming season, then I take it for granted that the cells are of the swarming kind.—ED.]



MR. H. H. PAGE, of the Page & Lyon Mfg. Co., New London, Wis., died on the 23d of May, at the age of 80 years. Page & Lyon is a firm that has come to be well and favorably known, and has long been an advertiser with us. If we are correct, Mr. M. D. Keith is the active man of the supply department, and the affairs of the firm so far as they relate to bee-keeping will continue as before.

#### RAMBLER'S RAMBLES RESUMED.

IN our previous issue I omitted to state the fact that John H. Martin, the Rambler, is now on another rambling-tour through California, in the northern part of that State. The articles began right where they left off—No. 146; and for any thing I know they will continue till further notice. They will be of the same general nature as the former Rambles, which were so eagerly sought for by our readers in the past, and Mr. Murray will be the special artist as before. Rambler will take along his ever-faithful camera and ever-present umbrella; and you may be sure that, through his eyes, his camera, and his typewriter (for he uses one now), our readers will see some interesting things. He is no longer a "tender-foot," but a Californian in the full sense of the word.

#### SHIPPING COMB HONEY BY EXPRESS.

IN years gone by we have cautioned bee-keepers against shipping comb honey by express. In the first place, the rates are exorbitant, and the commission man is sure to charge it up to the bee-keeper. In the second place, when properly put up, comb honey will go much more safely by freight, even throwing out of the account the difference in charges. Comb honey will not spoil, like strawberries, and there is no need of immediate haste to get it to market. Haste makes waste; and if ever that old saw applied it is when one is foolish enough to send his honey by express. The editor of the *American Bee Journal* thus discourses on the same subject:

A prominent Chicago honey dealer sent for us to come and see a lot of comb honey that he had just received—from a bee-keeper about 50 miles from Chicago. The honey was put up in double tier out-of-date 24-pound shipping cases, and two of them had been fastened together by nailing pieces of lath across their ends. There was perhaps 500 pounds of beautiful honey in the shipment. But it wasn't so beautiful when the commission man received it. It was the worst broken-up—and broken down—leaky lot of honey we ever saw. It was shipped by *express*. That, of course, explained it. We could scarcely believe it, when we were shown the shipper's letter, to find that he was an old, experienced bee-keeper, and yet knew no better than to ship such a lot of honey by express! Of course, he doesn't read the *American Bee Journal*.

The producer, in his letter of instructions to the dealer, was very careful to tell how carefully the honey was graded, and how well it was put up; and that he expected a good price for it, of course. But we wouldn't have given 5 cents per pound for it. Why, we shouldn't have wanted such a mess at any price.

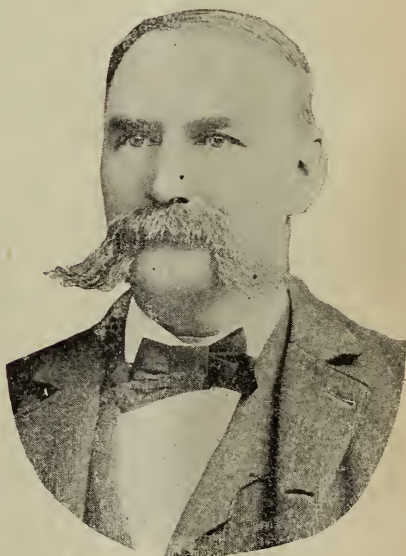
It seems strange that, after the bee papers have been so careful to tell honey-producers just *how* to prepare and ship comb honey, those that should know better will imply go on in their blindness, and then blame the commission man, very likely, if any thing is wrong, or different from what was expected. And yet, if some folks think they know it all, and won't read, they will have to take the consequences, of course.

Now, *don't* ship comb honey by express. Put the shipping-cases of honey in large crates holding perhaps 200 pounds each, with several inches of straw in the bottom and sides of the crate. Then nail a 3 or 4 inch board on each side a third of the way down from the top, letting the boards extend about eight inches at each end, for handles by which two men will carry the crate. Honey thus packed will stand lots of bumping around, and will almost invariably reach its destination without any breakage whatever.

It is almost unnecessary for us to state that our experience in handling comb honey leads us to indorse every word. Indeed, I should like to underscore every line of it in red ink if I could.

NOAH D. WEST.

LATE one afternoon last August I found myself *en route* for Schoharie, on the Middleburgh & Schoharie R. R. But before I knew it, scarcely, I had reached the end of the road, the conductor having carried me past my destination. "Middleburgh? Middleburgh?" I



N. D. WEST.

kept saying over to myself. "Why does that sound familiar to me? Why, sure enough, that is where N. D. West lives—the man who invented the West queen-cell protector, queen-cage, and bee-escape." He was the man whom I ran across accidentally on my first bicycle-tour away back in 1890. At that time I made only a brief call, but enough to satisfy myself that N. D. West was one of the prominent bee-keepers of York State—a man who has from 300 to 400 colonies in from three to five different out-yards.

At the time, I did not relish the fact that the conductor had carried me beyond my destination; but the more I thought of it the

more I thought there must be some providence in it.

As my bicycle had been left behind, I engaged a livery rig to take me out to Mr. West's home. Unfortunately, both Mr. and Mrs. West were out on a tour of selling honey, and would not be back for a week; but one son and daughter were at home, and the man who helped to take care of the bees.

A beautiful hill (for which New York is famed) stands back of the homestead and home apiary. I snapped my Kodak on it twice, taking in the apiary in the foreground; but, unfortunately, the film was poor. But I later secured a picture of Mr. West himself—a very familiar face at bee-conventions.

At the time of my former trip, 1890, Mr. West was using nail-spaced or staple-spaced frames. He was still using them last summer, but was slowly introducing into his apiaries the Hetherington-Quinby closed-end frame. I do not remember distinctly now, but I believe, all things considered, he preferred this frame, both for winter and for general handling. His son pulled apart one of these hives, while I with Kodak stood ready to take in the whole method of manipulation; but owing to aforesaid poor film, and to the fact that the bees were "fighting mad," my shots did not amount to any thing. I managed to press the button three or four times, in spite of the bees. The buckwheat flow had only just about closed; and as the morning air was a little cool, the West bees did not seem to take kindly to having me prying into their affairs.

Mr. West, like all inventors, has an interesting workshop; and during the odd days when he can not do much else, he evidently enjoys himself "making things." I should judge so from the numerous ingenious contrivances of various construction here and there, among which was the West queen-cell protector, queen-cage for virgin queens, and the West bee-escape.

#### WORK AT OUR OUT-YARD; SMOKER FUEL.

I AM having lots of fun now at our out-yard; and the more I handle bees the more I am convinced there is something new to learn, or, rather, some old new thing that has been overlooked. For instance, did you never discover that, when using excelsior or shaving-fuel (planer-shavings), you get far better results by using a little rotten wood with them? The last named serves to hold the fire, and prevents the smoker from going out at a critical moment when the shavings are about burned out. About as nice a thing as I have found yet is to take an old dry limb of a tree, bone-dry, and snap it up into right lengths. Four or five of these, about as large as one's finger, are to be mixed in with the shaving fuel; then, my, oh my! I am ready to bombard the worst bees or hornets in regular Dewey fashion.

#### BEE-SUIT.

Oh, yes! I have gotten a great deal of comfort out of a pair of overalls with apron front—that is, just about such overalls as machin-

ists, firemen, and engineers use. Mrs. R. says I have a great fashion of soiling my clothes with honey, wax, and propolis—more often the last named. It has been such a bother to change my clothes that I have been in the habit of going to the out-yard with my nice "how-do-you-do?" every-day business suit. Well, now the program is all changed. With a pair of overalls, with bib (or apron) front, the bib coming almost to my chin, and being held up by shoulder-straps hitched to the rear elevation of pants (sometimes when I get tired of standing), it is a real comfort to get down on my knees in the dirt, and feel that I am not spoiling good clothes by the operation. By the way, these overall suits can be procured with handy pockets so that small tools like a scraping-knife, screwdriver, etc., can be within convenient reach.

#### AN AUTOMATIC CONTRIVANCE FOR CATCHING QUEENS.

After you had hunted through a powerful colony for the queen to clip her and could not find her, and hunted again, with the same result, did you never wish you had a sort of machine that would do the work something after the fashion of a trap to catch a mouse, except that the mouse in this case would be the queen? Suppose, for instance, you could raise the cover and slip a—well, a rigamajig between the frames, put the cover down, and let it stand till the next day. S'pos'n you could go to this hive, and a lot more like it similarly rigged out, lift out your rigamajig with the queen in it; clip her wings, and let her loose in the hive again.

Perhaps this speculation is rather wild. I am inclined to think so myself, for I really do not see how a trap could be devised that would do the work—unless a Porter bee-escape in connection with a cage of some sort. But here is the rub: What shall we do for a bait to get the queen to the trap? I do not know of any thing unless it be a queen-cell containing a virgin queen, of which the reigning mother might be so jealous as to crawl into the bee-escape in order to destroy the cell.

Well, I shall have to stop speculating. If some one else has discovered something that will catch the queen and save this everlasting job of hunting when we go through the apiary every year to clip queens, well, I shall rise up and call him blessed.

But, say! look here. Is not the best solution of the problem, after all, an Alley trap? That saves mutilating the queen's wings, is ever ready to catch the queen, and, besides, will trap the drones upstairs, where they die, no longer loafers and idle consumers of the treasure of the hive. The old-style Alley traps had too small an amount of perforated-zinc surface. The new style has more surface, and more holes to the square inch.

#### A PRY FOR SEPARATING HIVE-BODIES.

For the last few days I have been trying various sorts of pries in lieu of a screwdriver—putty-knives, scrapers, and all sorts of tools; and so far the best one I have seen or tried, rather, is the one made by E. P. Churchill. Here is what he says about it:

I see in GLEANINGS a cut of frame and hive mover. Some ten years ago I decided that a screwdriver was about the worst thing about moving frames and lifting cases, etc., and I made a tool that is one of all sorts. We need a scraper in the corners of hives as well as, often, at sides and bottom; and, too, it's just the thing to clean in corners of window-sash, and then the women can scrape the spider and kettle bottoms; and it's just the tool to scrape up spots on the floor. They can be made of wornout files if one wishes, and save quite an item. I'm not a real blacksmith, but I'm going to the shop and make one and send you. You will see I make the wide end standing out so as to reach handily into corners of hives or any corner; and after using awhile, all who use them say, "Why didn't I think of that before?"

I make another tool for a wide scraper only, that works nicely. One party said it was the best thing he ever saw.

E. P. CHURCHILL.

Hallowell, Me.

#### NO HONEY, AND PROSPECTS NOT FLATTERING.

UP to this date, June 14, so far only one report has been received showing that honey is coming in. All the rest report no honey and few swarms. For two weeks our bees have had to be fed, notwithstanding the white clover has been out in full bloom a part of this time; but up till within three or four days it has been quite dry. We are just now rejoicing over the abundant rains so much needed. We begin to hope that the nectar will begin to come.

Present indications go to show that there will probably be a fair flow from basswood, although at our basswood apiary there is scarcely a tree that has any buds on it; but the forest-trees and shade-trees are loaded.

#### DRAWN FOUNDATION WITH NATURAL BASES.

SEVERAL have written of late, asking why we had nothing to say about drawn foundation. I will explain: It will be remembered that the dies that were made last season at so great an expense (nearly \$1000) turned out a product with *flat* bases. Our early experiments seemed to show that, when cells were deep, the bees would accept such a base as readily as the other. But the developments of the season went to show that the bees did not in all cases take kindly to it. In some instances, at least, they thickened the midrib in their effort to make concave cell-bottoms. While they did not do so in all cases, the fact that the bees did so at all in a few instances was sufficient reason to induce us to abandon the dies, as much as they cost, and go to work on a set that would produce *natural* bases.

Mr. Weed thought the problem would be easily solved; but although he has been working on it for nearly a year, meeting with repeated failure, he has only just succeeded in having a set made that makes drawn foundation with natural bases a success in every way—at least so far as the mechanical construction of it is concerned. In the mean time while he was experimenting we feared that he might not be able to perfect his dies, and it seemed wise to say nothing about the new product until we were *sure* of what we could do.

I am now glad to report that the new dies are in operation, and making a superb drawn foundation with *natural* bases. This product differs from the old in two quite important respects. First it has the natural bases already referred to, and, second, the cells are

only  $\frac{1}{8}$  inch deep. I suppose we *could* make them deeper; but a few of our friends, fearing that deep walls will either give rise to the comb-honey canard or else make thick cell-walls in comb honey, we refrain. With the cell-walls only  $\frac{1}{8}$  inch deep it will run almost as many feet to the pound as the ordinary super foundation. It is nothing more nor less than a beautiful transparent foundation having bases as thin as the bees make them, with cell-walls about twice as thick as we find them in nature. Indeed, it looks very much like common foundation, except that the walls are nicely started for the bees, and the bases are much thinner.

Mr. Weed is very confident that they will not remodel the bases, nor will they stick in an accumulation of wax as they did do with the old flat-base drawn foundation. From the tests he has made in the hive, it appears the bees have a decided preference for it. Samples of ordinary foundation and the natural-base drawn foundation were placed side by side. The bees immediately accepted the one (deep cell) and ignored the other; that is to say, I have myself seen the drawn-foundation piece thickly covered over with bees while the ordinary article had not a bee on it.

I make no predictions as to what the new product will accomplish; but I feel reasonably confident that it will give rise to no thick midrib in honey-comb as did the old-fashioned flat-bottom drawn foundation; and as the cell-walls are only  $\frac{1}{8}$  inch deep, there should be no occasion for fearing that it will give rise to canards about manufactured comb honey.

A moment ago I said the cell-walls of the new drawn foundation were twice as thick as we find them in nature. It would be possible to make them just as thin as the bees construct them; but Mr. Weed is satisfied that the bees will thin the *walls* when they will do little or nothing with the *bases*. The extensive experiments we have made in the past satisfy us that this is correct.

Universal testimony (with, perhaps, one or two exceptions) went to show that drawn foundation, imperfect as it was last season, was readily accepted by the bees; but owing to the fact that the base was flat, they did not seem to like it after they had had further acquaintance with it; and in some cases, at least, comb honey was not completed from it any sooner, if as soon, as from common foundation. But now that we have given the bees the same article with a *natural* base, we expect different results. But if, however, the bees make from it a "gobby" article of comb honey, no one will be quicker to drop it than the Root Co. The fact that we abandoned the flat-base foundation last season because of this defect is pretty good evidence that we will do as we agree. But neither Mr. Weed nor ourselves would have put a lot more money into the new dies if we had not felt reasonably sure that the article we are *now* offering to the public would be free from the objections found against that which we put out last season.

We are now prepared to furnish it in small sheets and quantities as indicated in Special Notices elsewhere.



## ON THE WHEEL.

There were two reasons why I had not had a long wheelride this spring. With so much rain till toward the last of May, the roads have been bad; and with such a great crowd of business it seemed almost wicked for me to desert my post. About the first of June, however, I began to feel a good deal used up. When everybody else was around in summer clothing, I still held on to my overcoat and fur cap; and if the wind got in the northeast, I was having grip and rheumatic pains or some other kind, it does not matter what they were. I had been reading letters so much that the mere act of reading a letter affected me very much as it used to when I tried to answer all the correspondence with my right hand and with a pen or pencil. First I had to stop writing; then I got a typewriter, and wrote with my left hand. When I could do this no longer I began to dictate; but of late, reading letters, or even dictating, seems to affect my right arm much as writing with a pencil did years ago. Yes, and finally it got so bad that I could not read the war news in the evening more than 15 or 20 minutes, without getting that old pain in my right arm and side. My digestion was bad also, and I began to think my days of usefulness were about gone by. How about the wheel? Well, I began to have despondent misgivings that even the wheel would fail this time. Finally I began to be so troubled about my health that I (once more) commenced *praying* over the matter. I wonder if somebody says to himself, "Why, Bro. Root, where was all your faith in God you have been for years talking so much about? You tried this, that, and the other; and last of all, instead of *first* of all (as we might expect from your teachings), you went down on your knees and laid the whole matter before the great Father above." Well, dear friends, I do not know how it is; but that seems to be the old story over and over again. When I get into real trouble, and there seems to be no other outlet, *then* I bethink myself of God's promises.

One evening, about the first of June, when I had been trying to read, and found that it absolutely would not answer, just before going to bed I asked God with unusual fervency to take the poor remnant of myself into his hands and keeping, and tell me what he would have me do. Just after that prayer I remembered that I had a pressing invitation to attend a bee-keepers' and horticulturists' meeting in the southern part of our State. In fact, the invitation had come some weeks before; but I decided it would be out of the question for me to desert my post at this busy time. But when it began to seem as if I was not going to be of much use at home I changed my mind.

On the morning of June 1st I was up at four o'clock, tiptoeing around the kitchen in

my stocking-feet, so as not to awaken Mrs. Root. After the fire was lighted, the kettle boiling, and every thing ready for her, I told her I must be off in just 20 minutes. She scolded me for not having awakened her sooner, and a little after five I was on my Columbia chainless, with light summer clothing. I thought once I should have to take my overcoat and fur cap. But I began to have faith that the wheel would banish the chills as it had done many times before.

My first destination was Sterling, Wayne Co., Ohio, where I was to catch the 7:40 train. I made the 14 miles in plenty of time, besides making a few pleasant calls on people I knew on the way. Then I enjoyed a hundred miles or more on the cars. Oh how pretty our State of Ohio looked on that June morning! My wheelride of 14 miles had sent the blood coursing through my veins so as to give me life enough to enjoy the beauties of a June ride over the country.

I left the train at Springfield, the county-seat of Clarke Co., a little after twelve o'clock. As I had the whole afternoon for making about twenty miles, I decided to visit a wonderful Indian mound at Enon, Clarke Co. My ride took me over the Dayton pike. In this part of the State, limestone pikes go out in every direction; and one can ride at almost any time when it is not actually raining. As I neared the town of Enon, the mound was in plain sight. It rises abruptly in the middle of a clover-field. The height is about 40 feet, and the sides are about as steep as dirt can be piled up. On the summit there is a level place some fifteen or twenty feet across, and one of the largest pear-trees I ever saw grows up there with great luxuriance. In fact, a little orchard has recently been planted all over this mound. A friend suggested that these mounds are the burial-places of ancient chiefs or kings. Said chief is always buried with his tomahawk, and trinkets made of copper, flint, etc.; and to prevent other tribes from digging up the body or bodies they adopted the plan of piling dirt over the remains. The greater the chief, the bigger the pile of dirt. The secret of the luxuriant grass, weeds, etc., and brush all over this mound, I judged to be because they had scraped up the surface soil to make it. A friend told me they often buried a number of persons with their heads in the center and feet out, like the spokes of a wheel. The copper ornaments and valuables were placed near the heads, in the center; then dirt was carried and put over all in such a quantity that other tribes would not be very likely to take the trouble to dig it away or disturb the remains. I wish that somebody conversant in such matters would tell me if I have a correct understanding of the reason why so many of these Indian mounds are found in different parts of Ohio.

Seven or eight miles from Enon I was told there was a celebrated spring at a town called Yellow Springs. They told me I would have to take a back road off from the pike, but they thought I would find it quite smooth if I did not mind the hills. I found the road very much pleasanter in one respect than the stone

pikes. There was not very much travel over it, and so it was free from dust; but the road was made of broken stone, just the same. I had strapped my coat on the handle-bars; and after I got to going down one hill and up another on that smooth stone track I began to gather life and enthusiasm. As it was a lonely road with but few buildings in sight I unbuttoned my vest, took off my cap, and laughed aloud to think of my deliverance from overcoat, fur cap, and neuralgic pains. I thanked God, and sang praises to him because he had heard my prayer and given me such complete emancipation from my troubles. In that wonderful book I have before alluded to, "A Singular Life," the hero, at one point in his life, gives voice to a prayer something like this:

"Lord, I have groped after thee, and to know thy will, and to do it if I could. I never expected to be happy. Dost thou mean this draught of human joy for me?"

Well, in spite of me my feeling was something like what is expressed in that prayer. I opened my mouth wide, and drew in long breaths of delicious cool air that expanded my lungs to their utmost extent. I did it again and again as I flew up and down the hills with the gentle breeze in my face. I could actually feel strength and energy pouring in at every nerve, and filling me with health and happiness; and I knew from former experience that this is wholesome and lasting energy. I knew that the oxygen that I was taking in by the "bucketful" that afternoon was going to last me several days at least. Let me digress a minute.

The exhilaration I have been describing was due, without question, to large doses of oxygen. Every physician, physiologist, and teacher will tell you so. There was not any humbug about it. Now, please pardon me if I touch on a particular hobby of mine. The men who advertise Electropoise and Oxydonor will tell you their humbug toy takes oxygen from the air and conveys it to the system; and people accept the falsehood and pay out their hard-earned money for the silly trap. Some of you may tell me that the vendors of these things are sincere. They are *not* sincere. When they invented the foolish story about oxygen crawling along a single wire,\* they knew it was a falsehood; and you can no more excuse them by saying they were honest, though mistaken, than by pleading that the man who makes counterfeit money is honest though mistaken. Did the counterfeiter ever believe that the money he made was genuine? Surely not. He deliberately planned to defraud his fellow-man, and you can not make any thing else out of it. Now, friends, when you see in any advertisement that the trap or medicine takes oxygen from the air and sends it into the system, you may know it is a deliberate fraud. Oxygen can get into the body through the lungs and into the blood only in

the way God planned it in the beginning. Indeed, its presence in the system through any other avenue would doubtless be very undesirable; and in the case of cuts it must be rigidly excluded.

Right in the middle of the town of Yellow Springs there is indeed a wonderful spring. It contains sufficient iron to give the rocks from which the water flows a yellowish or reddish tint, and this gives the spring the name it bears. The water is cool and refreshing, and it comes in sufficient quantity to fill a little pond and make a very pretty waterfall. A large hotel, with bathing-rooms, etc., is near by. After enjoying the refreshing water of this spring by sipping it leisurely for some little time, I went into a restaurant, and told them I wanted to lie down somewhere and rest for an hour; and when I should wake up I wanted them to have ready the nicest beefsteak they could find in town. A pleasant-looking woman assured me I could have both the rest and the steak, with such a pleasant smile that I thanked God again for this beautiful world of ours with all its comforts, and for the wonderful way in which each and all minister to the wants of others. I had a refreshing nap, as I always do—that is, when I do not ride *too* hard; but when I was looking for my beefsteak my hostess informed me that she guessed I would have to take something else, for the man who generally brought her the meat could not be found anywhere. But I was feeling too well then to be cross about any thing, and so I told her to bring me any thing she had, as I wanted to be off. She said she could give me eggs and toast and strawberries—the first berries of the season. And then I felt thankful to remember that, while off on wheelrides away from business, I could eat almost what I pleased, or what other people did. I made the remaining ten miles of my trip over that beautiful pike so quickly that I reached Xenia just as my relatives were at tea. So I sat down with them and had some *more* strawberries while we talked over matters in general.

The progressive people of Greene Co. hold horticultural and apicultural meetings once a month the year round. The meetings are held at different places so as to accommodate the people from different parts of the county; and in the summer time they generally hold them at the residence of some bee-keeper or fruit-grower, or both together. This one was held in a beautiful schoolhouse at Alpha Corners. Refreshment was spread on tables in a beautiful grove in front of the schoolhouse. They proposed to have me talk a good part of the afternoon. I said, "All right, friends; I will talk just as long as you wish to have me—that is, if you will ask questions, and tell me on what line I can give most assistance. But before going to the hall, let me lie down somewhere and sleep about half an hour."

One of the fruit-growers furnished me a dainty sleeping-place. In fact, every thing was so comfortable and pleasant that I forgot to wake up till a delegation was sent to inform me that dinner was ready. Well, to make a short cut, and to get to the dining-

\*This oxygen story is just as sensible as the claim that, by means of a wire, one could convey corn out of a crib into a pigpen so as to fatten swine; and yet religious papers give place to such ridiculous claims, and ministers of the gospel lend their names by way of indorsement.

tables as quickly as possible, they started to pilot me through a strawberry-patch. Now, this patch was planted like our matted rows; but the proprietor took a cultivator made just right, and sliced the matted row down to about six inches in width. Then he mulched it with straw in the fall, and the berries were just ripening. Of course, I wanted to see how many I could call by name; but there were some seedlings originated by the owner, that I had never seen before. They had a peculiar spicy flavor, and—how do you suppose A. I. Root is going to get to the dinner-table, even if everybody *is* waiting, when at every step he encounters new varieties of strawberries—great whoppers, with new and brilliant color and exquisite aroma? I do not know but a second delegation was sent to hurry up the first one; but we finally caught up and mingled with the crowd around the well-filled dining-tables. Right before my plate was a great heaping dishful of garnet-colored Warfield strawberries. But we had to stop talking about strawberries a minute, for somebody was calling us to order, and then I was a little startled when it was announced that “Brother Root will give thanks.” Well, I had been giving thanks all the morning, so it did not trouble me particularly to express my thanks out loud. It seems that a large club of GLEANINGS has been going down to Greene County and vicinity for a good many years. Some of the gray-headed veterans assured me that they had been reading it with unabated interest since it was printed by windmill power; and they had always felt a longing to see A. I. Root, and take him by the hand. I think I must have talked half an hour or more, and then I answered questions as best I could for another half hour or more. The schoolroom was crowded so that two people sat in a seat that was intended for only one. The women and children were there—yes, and the prattling babies. How can we have a good farmers’ meeting without them? I told them my talk would be about God’s gifts, and that, before starting, I wanted to direct attention to one of his most precious gifts—music; and that, while I thanked God for music, I also wanted to thank the good lady who had cheered our exercises with so many beautiful pieces. Now, I did not tell her nor that audience what wonderful thrills of joy poured through my soul by listening to the different pieces she gave us. Mrs. Root would say, very likely, that it was my wheelriders that gave me inspiration and enthusiasm to enjoy the music. If I should say that there was at least *one* song that to me was more entrancing than any thing I ever heard before, some of you would remember that I have said almost the same thing on several occasions before.\* Well, even if I have I tell you that the Greene County bee-keepers and fruit-growers are not only well up with the rest of the world in farming and horticulture and bee-keeping, but they know how to get up a dinner and entertain folks, and how to get them to come out in crowds, even in the month of June;

and the *music* they provide is by no means behind in quality with the other good things. I do not know but I have sometimes criticised people for neglecting work that ought to be done, to go to picnics; but I tell you the horticultural picnic is a different affair. I wonder how many counties there are in Ohio that have similar gatherings. This association has been kept up, if I am correct, for a good many years, and they succeed in getting a good attendance every month in the year.

Only seven miles away, in the city of Dayton, I remembered I had a good sister waiting and watching for me; and although the people were a little curious about the wheel I rode without any chain, I bade them adieu and started off. I rode just fast enough to enjoy my ride comfortably; but as I was going down the last hill before arriving at the city of Dayton, somebody on a wheel behind me called out. The person said he had been chasing me every mile from Alpha school-house; and as he had a new Columbia he did not think I would get so far before he overhauled me. This friend, Mr. B. Grant Smith, is in the mail service on one of our railways. He is also a bee-keeper, and volunteered his services in showing me around the city of Dayton; and I shall always feel much indebted to him when I think of the beautiful ride we had through the city in the evening. You see I had the finest wheel the world can make (at least the Columbia people say so). Then I was riding on the finest asphalt pavement there is in Ohio—perhaps in the United States (at least the Dayton people say it is); and, to cap all, my comrade informed me that I would have to have a lamp on my wheel or else the police would “pull me up.” So he went into an immense bicycle-store and got one of the latest acetylene lamps (“the finest in the world” so the maker says). This lamp is charged by putting in a little tin cartridge. These cartridges cost 35 cts. a dozen, and one cartridge runs a whole evening, and gives light enough to show the time of night on a clock in a church-steeple. Among other sights he took me over the grounds of the National Cash Register Co. I went around the next morning and spent an hour in looking over the works from the outside. I did not go through the inside, because my train left at too early an hour. There may be finer manufacturing establishments in the world than this one in Dayton, but I doubt whether there is one very much better. The whole plant is in the midst of a beautiful lawn, covered with ornamental plants and shrubs, and kept in order by a professional landscape-gardener—one who is an artist in every sense of the word. A brief glance at this establishment teaches us valuable lessons. For instance, it is possible for a machine-shop or foundry to be managed with such order and system and neatness that it shall look more like a drawing-room than it does the average machine-shop or foundry. At one side of the grounds there are two very pretty buildings labeled respectively “Men’s Bicycles,” “Ladies’ Bicycles.” The whole locality looks more like a fairy land than a place where men and wo-

\*During that special piece of music I thought again of the young minister’s prayer—see page 483.

men work; and the contrast is so wonderfully strong, that, compared with the great part of the workshops and factories in our land, it startles one. The proprietors evidently, in planning for their works, chose a part of the city where they could have plenty of room. In fact, the whole institution covers several acres. Instead of trying to make every foot of space available for business, there is a front yard of beautiful velvety lawn, beds of flowers, and beautifully kept shrubbery, that would grace the finest dwelling. Then there are walks of sawed stone flagging, wagon roads of asphalt pavement, and, more wonderful still, the little cottages that surround the grounds seem to have caught the spirit from the big establishment, for they too are models of artistic beauty. Their little lawns, flower-beds, and shrubbery, are in very good keeping with the great establishment itself. In the background, away from the main street, behind the factories, there is a boys' garden. It is divided off into plots of a rod or two in extent, and I am told prizes are awarded to the boy who shows the neatest design in gardening on a small scale. Many of these little plots are models of neatness and care; but others show symptoms of neglect. You see, boys are not all alike. At some future time I may describe the interior of this group of factories, for I had a warm invitation to do so.

strawberry-grower should love the strawberry-plant and every thing about it—its thrifty foliage, its beautiful white roots, its enterprising runners, and its strong disposition to perpetuate itself and to make plants—as well as to love the beautiful fruit it gives us. Such a love is right and proper; and when it comes from loving God, the great giver of *all* these gifts, it is far better still; and in one sense I admit that Nature may return this affection. The things we love, thrive and prosper, whether it be bees, a calf, a colt, or a strawberry-plant. In one sense Nature seems to respond—at least in a certain way—and return the affection we lavish upon her creatures. But Nature is nothing, or comparatively nothing, without humanity. Nature of herself is hard and unfeeling. I once saw a comrade drowned before my eyes. After he had gone down for the last time the water rippled over the place where he disappeared, as if nothing at all had happened. Nature was so unfeeling, and so oblivious to the tragedy that had just been enacted, that it seemed horribly cruel and unfeeling just then. No human being was near. I was alone with the dead, for I knew he must be dead before help could be obtained to rescue him. Nature cares nothing for our woes.

Again, Nature makes no progress. It is unnatural to milk our cows, to make butter or cheese; for Nature must be diverted from her natural channels in order to do this. If I worship Nature to such an extent that I disdain human progress, I should have to lay aside my spectacles; and I have sometimes tried to imagine what a helpless creature I should be without my glasses, especially when I go to church and happen to leave them in my other suit.

You say Nature is truth. I admit that Nature does not tell falsehoods; but neither does she tell us *any* thing, or comparatively nothing, without artificial aids. How much progress could we make in astronomy without these artificial helps?

When we feel disgusted about the hypocrisy and cheat that we sometimes see among men, I know how natural it is to turn to Nature; and I know, too, how the feeling comes that leads us to say that in Nature there is no hypocrisy. But, dear brother, if there were not a possibility of falsehood you could hardly have a fair conception of truth. After we have been forced into the companionship of a man who is so much in the habit of telling lies that he uses falsehood when truth would do a good deal better, we are prepared to appreciate a good honest straight man when we meet him. I love Christian people ever so much more after having been obliged to be in the company of those who profane God's holy name. When Robinson Crusoe was on his island, and saw no human beings at all, his companionship was entirely with Nature. He met nothing but "truth" then, as you put it; and yet we know how gladly he welcomed a human being for a companion, even though this human being was a heathen and a cannibal. Humanity is often bad, I grant you; but I think it is a thousand times better than no



Jesus answered and said unto him, Verily, verily, I say unto thee, Except a man be born again, he can not see the kingdom of God.—JOHN 3:3.

The matter that is in my mind to-day, dear friends, was suggested by the following letter:

I love the philosophy of GLEANINGS. Knowledge is power. Your success in bee culture is the measure of your wisdom in that line, and it is great; it is good. I love Nature. Nature is truth. Any thing not of Nature is not true. The theology of GLEANINGS I do not believe in, because I can not ignore all Nature and believe a dream. The story of Christ is unnatural, and begins with a dream, consequently is not true.

Church and state ought to be separate, so had business and religion. The story of Christ contradicts itself as well as contradict Nature. Notice how your text in GLEANINGS, May 15, contradicts the character of Christ given in other parts of the New Testament as being humble, meek, merciful, etc. Matt. 10:34, "Think not that I am come to send peace on the earth. I came not to send peace but a sword." Then read the 35th verse. Dear me! how can I believe such to be the word of God?

SAMUEL CLOUGH.

Ellston, Ia.

Friend C., I thank you for your very kind words in your opening paragraph; but your next sentence makes me feel sad, particularly as it is very much in the line I was in the habit of talking before I accepted Christ Jesus as the Son of God and the Savior of the world. I too, dear brother, love Nature. When somebody asked me, "What is the most important thing in succeeding with bees, strawberries, and other rural industries?" I replied that the most important thing to my mind was to *love* the things in question. The successful

companionship at all. People during all ages have made the mistake of thinking they could be better by holding aloof from mankind. The Bible, however, gives us no encouragement for any such way of living. When Jesus left this earth he prayed for his disciples. Now, he did not pray that they might be kept entirely from evil men, or, if you choose, from falsehood and deceit. He said, "I pray not that thou shouldst take them out of the world, but that thou shouldst keep them from the evil." If we are to be the "salt of the earth," we must be all around among the people, in order that we may meet and put down fraud and untruth.

The theology of GLEANINGS is probably very far from being perfect; but surely, dear friend, it does not *ignore* Nature; in fact, I believe it is because it has been so devoted to Nature and Nature's gifts that it has received the support and patronage it has. Perhaps I have not touched directly on the matter of dreams; but you know how severe GLEANINGS has been in its criticisms of all superstitions; and a faith in dreams would, in my opinion, be superstition and nothing else; but for all that, I can by no means doubt that God might, in past ages, have used dreams as a means of conveying his will to man. The steam-engine and telegraph are nothing but dreams realized. No human being can tell just how how much the mind of God is reflected in suitable human minds. You say the story of Christ is unnatural, and I agree with you. It is an abrupt departure from nature—that is, from what is usual. I once held just about the ground that you do. Full well I remember the day when the truth you have partly expressed burst upon me. The little text, "Love ye your enemies, do good to them that hate you," was by accident brought prominently before me when I was a busy business man a little more than thirty years of age. As I attempted to go on with business I pondered the matter. What an idea to be intruded into the world of business! Why, it is the most unnatural thing anybody ever heard of, to *love* his enemies. Think of loving a man who puts himself out of the way to injure you!

Not many hours ago a man dropped a box containing two cans of beautiful honey. Now, I do not know for sure, but I rather suspect he tried to break it and let the honey run all over the floor because he was mad. He was vexed because he could not have his own way. You have seen people like this, who would purposely damage people or property because they were ugly. Now, if you choose, let us consider loving a man who purposely and deliberately does a thing of this kind—wastes your nice honey and spoils property scattered about on the floor. It is contrary to Nature, is it not?

A poor boy in the jail once said to me something as follows: "Mr. Root, it is agin Nature to love a man who purposely does you a mean turn." He had it exactly. These words and others of a like kind were not spoken by humanity. In talking about the matter before I became a Christian I said to my mother, "As I think over these words, 'Love ye your

enemies, and do good to them that hate you,' somehow it impresses itself on my mind that they came from heaven and not from earth." They are the words of God to his children, and not the words of any human being.

You say the story of Christ is "unnatural," and, consequently, not true. When Dzierzon first proclaimed the natural history of the bee, the whole world said it was "unnatural," and hence not true; but they were finally compelled to admit that the theory was true, and then, and not before, they admitted the teachings were in accordance with Nature's laws. The story of Christ is, I believe, universally accepted now; at least, millions of our most intelligent and scholarly men accept it—so universally, at least, that it is a long while since I have heard anybody dispute its truth. When we date our work every day *anno Domini* (year of our Lord) 1898, we simply acknowledge it is so many years since Christ was on earth; and, if I am correct, *every civilized nation on the face of the earth now so dates its writings*. When you say church and state ought to be separate, I suppose you mean that religion should not be used as a lever to push business enterprises, or that the priest or minister of any particular church should not have power invested in him to push or hold back political machinery, and I entirely agree with this. But you should remember that the church never sought union with the state, and has now almost entirely disengaged itself from the use of secular power. Only very bad men have tried to govern in religious matters through the agency of human government. You may thank the church itself in this country that you are not taxed to support it. In Turkey, the government would tax you half of all you earn to support the church of that country. Perhaps you would call that "unnatural," and, hence, not true; but the reality would be very stern. Still, I do think the pulpit should be using all the influence it can summon to enforce *righteous* laws, and that the *laws* of our land should protect our people in worshipping God according to the dictates of their own consciences. The laws of Moses and the laws that are being enacted now throughout the world for the protection of our people certainly run along in parallel lines.

I thought in my talk to which you referred, where I quoted Jesus' words, "I came not to bring peace on earth, but a sword," I made my meaning plain. Every little while some person, or perhaps some sect or denomination, comes up, carrying moral suasion so far as to say that it is *wicked* to fight or to have war. Not a week ago I had a little talk with a very good old man who said the denomination to which he belonged did not permit him to fight. Said I, "My good friend, if a lot of drunken burglars and highwaymen were to break into your house at night, would you not fight for the sake of your wife and children?" He shook his head, and said his people were not allowed to fight, even under such circumstances. Now, I can imagine that a quiet and peace-loving old man like himself might choose to let the ruffians have all his money,

and let them go away quietly, rather than to undertake to shed blood. It would be a question with many people whether it is worth while to undertake to kill the midnight assassin, to save property; and one might even let the ruffians pound him (personally) to jelly rather than strike back.

I would gladly stop here, dear friends, and not go any farther; but you who are in the habit of reading the newspapers know that is not all of it by considerable. These desperadoes who break into houses because they have reason for suspecting there is money there, are usually crazed with drink. They are not human beings—they are wild animals. Now pardon me if I hold up before you what has been enacted many and many a time of late in different parts of this country. Suppose these devils in human form should presume to lay violent hands on you wife or daughter; will you still say you can not lift a hand in their defense because of your religion, and at the same time you claim to be a *man* in the highest sense of the word? What would become of us if there were no man among us ready to sell his life, and sell it as dearly as possible, in defense of the home and family?

During the war that is just now upon us, our brave men are not all fighting for their wives or their daughters; but, thank God, we are showing a higher type of Christianity *still* in fighting for the women and children of poor outraged Cuba. Now, dear brother (for such I prefer to call you, although I must think you are a greatly mistaken one), can not this man who defends his wife and children, as every father is expected to defend his own—can not this man at the same time be "humble, meek, merciful," etc.? These terrible scenes of the invasions of homes by drunken men have been enacted in our own neighborhood; and if a party of masked men should beat in our door, as we read about in our papers, I should pray God to give me strength and skill to beat the brains out of one or more of them if I could; and if he answered my prayer I would go down in thanksgiving and praise to him for having *heard* that prayer.

Now, God forbid that I should utter a sentence like the above, and stop right there. Whenever I read of one of these outrages I feel more and more the importance of pushing all sorts of missionary work. I feel more like helping our churches, Sunday-schools, Endeavor Societies, Young Men's Christian Associations, and last, but not least, the Salvation Army; and I feel, too, in view of the fact that strong drink is always back of it somewhere, that our *Ohio* Anti-saloon League and our *National* Anti-saloon League should have men and money to back up their work. I feel, too, that we fathers and mothers should see to it that our laws requiring children to be in school should be more rigidly enforced. Let the truant-officers know we are back of them. We are each and all to blame for letting criminals *grow*. Instead of killing them off as fast as they appear (as we do the potato-bugs) we want them to grow up to be *God-fearing men and women* instead of anarchists and foes to

society at large, as is now too often the case. So far I have had but little to say in regard to the text at the head of this talk. Our good brother asserts that Christianity is "unnatural," and I have partly agreed with him; but the natural man is a brute, or worse than a brute. In different parts of the world where people, under force of circumstances, have grown up without Christianity or education, we find them heathen and cannibals. A cannibal is, if you choose, a natural man, or a man who has grown up with no teacher but Nature. Jesus said to Nicodemus, and with much force, "Except a man be born again, he can not see the kingdom of God." The little text about loving your enemies and doing good to those who hate you was instrumental, among other things, in opening my eyes to something that is not *Nature*, or, in one sense, that is not *Nature's* law. I got a glimpse in that little text about the new birth, and from that day to this (some of my readers doubtless remember the time) I have been untiring in teaching, wherever people would listen to me, this new birth that comes from heaven and not from earth. I have been untiring in pointing mankind to the Lamb of God that taketh away the sin of the world.

Dear brother, that 35th verse of the 10th chapter of Matthew to which you refer is only to remind Christ's followers that he who wishes to be a Christian in the best sense of the word must choose Christ *first*. In fact, Christ should stand *before* father, mother, or any other earthly tie. In other words, a man must do *right* as God and his own conscience tell him what right is, even if it breaks up the dearest of family ties. Or, to make it a little plainer, let me tell you something of my own experience: Two neighbors quarreled about a line fence. One shot the other. But the man who did the shooting had a brother who was well to do, but he was a Christian man. Now, should this Christian man use his money to screen his brother, or try to keep him out of the penitentiary, when he had deliberately transgressed the law? Should a Christian man use his money to screen his own brother from a just and deserved punishment? This thing meets us almost continually at the present day. We have lynchings because people say the laws are not enforced. The reason the laws are not enforced is because the criminal has wealthy friends or relatives; and the lawyers openly declare they will get a man out of his trouble (no matter about his guilt) providing his friends have the *money* to do it. Now, if one wants to be a *man*, and *manly*, in the best sense of the word, which shall he love most—*right doing*, or, if you choose, *righteousness*, or father or mother, or son or daughter? Then our Savior adds, "He that taketh not his cross and followeth after me, is not worthy of me." And he says again, "He that will find his life shall lose it; and he that loseth his life, for my sake, shall find it."

Dear brother, let me, in closing, ask you if the truths of the Bible as I have presented them are not infinitely more grand and ennobling than the bare *unfeeling* truths that you find in Nature.



#### OUR STRAWBERRY REPORT FOR 1898.

Darling and Earliest are both extra early; but like their parent, Michel's Early, they are shy bearers. A year ago I was misled in the matter because we had a few plants of the Darling that gave a great lot of berries; and this is true even now. By picking out certain plants, and putting them in a bed by themselves, I could make a wonderful showing of the Darling. Not one in four gives a good yield, and, like the Gandy, quite a few plants do not give even a single berry the first season. If you want to catch the very earliest market, these are all right; but the yield is small, and they will be gone entirely when other good berries are at their best.

Carrie is certainly an improvement, both in size and firmness, on its parent, the Haverland; but at present we are not sure that it is as great a yielder as the Haverland.

The Nick Ohmer is all I have claimed for it, but I am afraid it will not give us as many bushels as some of the smaller ones do.

Margaret is much like the Nick Ohmer, but not of as good shape.

The Marshall is a splendid all-round berry. It is fairly productive, commences ripening with the earliest, and holds out to the latest. In color and shape it is equal to almost any thing we have.

Brandywine is a beauty; and for hill culture it is about the handsomest plant, when you consider both foliage and berries, of any thing I ever saw. The shape is fairly good, the color is perfect, and it is the firmest berry by all odds I have ever had any thing to do with.

The Wm. Belt is a good companion to the Brandywine. It is a little earlier, but not of quite as good shape. Both are splendid yielders.

Of the newer berries that I have not reported on before, we have two worthy of mention. I would call special attention to the Clyde. The berries are large and fine, the plants are strong and thrifty, and just now I should call it the largest yielder of good-sized berries of any thing I have ever come across, not excepting our old friends Beder Wood and Parker Earle. The Clyde is certainly an acquisition; but, like other great bearers, it must have plenty of manure and plenty of water.

The Star is a strong grower, and resists drouth remarkably well, as has been claimed for it; but otherwise it is so much like the Sharpless (only it is not as sweet) that I don't know but I might mistake one for the other.

The Louis Gautier, the French berry introduced by our friend Goldsborough, is a large beautifully shaped berry, almost white. I was showing our pastor through the new strawberries yesterday; and when I handed him one of the Gautiers he remarked, "But would this new berry sell on the market, with its color so nearly white?"

"Taste it, please, and then answer," I said.

He took a bite from the berry, and then with a smile, replied, "Oh! I take it all back—I take back every word of it. This would sell anywhere if one just got a taste of it."

The berry is of large size, as round as a peach, and pretty nearly white, with the exception of a peach pink on one side—some times a little pink all over; and the funnies part is, it has a distinct peach flavor. I am afraid it is not going to bear very many berries, however; but I have tested it only in a raised bed, and for the past two weeks we have had scarcely a drop of rain, so our raised beds are all suffering.

By the way, I have demonstrated this spring as I never saw it demonstrated before, that you can have a paying crop of strawberries from a piece of ground where a crop of something else has been removed as late as September. Put out your plants with the transplanting-machine I have figured, then give them perfect cultivation, working in manure in abundance, and in nine months from the time the plants are put in the ground you can harvest a paying crop of beautiful fruit.

June 13.—Our drouth of two weeks has been broken by repeated thunder-showers until the strawberries and every thing else are now just booming. But business is also still booming, and every man and boy available has been crowded into the saw-rooms, packing-rooms, or somewhere else to help get off orders. The strawberries are ripening grandly, but everybody is wanting vegetable-plants just now, and Frank and George have not a minute to spare to pick the berries; and for almost the first time in my life I am short of help, and there is none visible—that is, none I should want to trust among the plants and berries. The price has gone down to 5 and 6 cents; but we still get 7 cents for choice ones. To-day being Monday I thought there was going to be an oversupply; but by a little looking around I managed to engage most of them; but just now, at 3 P. M., the women are all ready to do the canning, but the berries are not picked, and there is nobody to pick them. I got tired of working in the office, and told one of the boys I would pick berries for a while, and I actually did pick four quarts. I enjoyed doing it, because it gave me an opportunity to test the yield of the new and old varieties. And which one do you suppose pleased me most in my picking? Inasmuch as I have been accused of always wanting something new, I feel a little pleased this afternoon to give my testimony in favor of our old tried friend the Bubach. There is this thing I like about it: Whenever you see a good strong plant with plenty of big leaves you may always be sure there will be great luscious berries to match; but on a great many other varieties, you find every little while a plant with a great mass of luxuriant foliage and *not a berry*. This is especially true of our new friends Darling and Earliest, and it is also true of our old friend Gandy. But the Bubach, with its rich dark-green foliage, never disappoints you. The berries are a little soft, and the plant is imperfect; but otherwise I believe the Bubach justly stands at least pretty nearly

shoulder to shoulder with our best new kinds. If there is one that is ahead of it for an all-round berry, it is, perhaps, the Brandywine. This is perfect, furnishes lots of berries, and yet they are about as firm to ship or can as any berry known. I was also greatly pleased with the Sharpless, another old friend that has been "tried and true." I believe it is the best berry to eat out of hand of any thing the world has yet given us. Jessie compares very favorably with it; but the Jessie does not always behave well in all localities.

Our plantation as it is cultivated in three different directions, which I have described, is now a thing of beauty, and bids fair to be a joy for—two or three years; at least if we keep the runners off and keep it cultivated. Of course, it is a job to mulch the berries so as to keep them out of the mud during a thunder-shower. We have been doing it with rye cut while the grain is in the milk. We have also tried the green grass. None of these things answers quite as well, however, as straw put on thick enough so the dirt can not even spatter up and spoil the berries.

While calling upon Mr. Nick Ohmer he said that the strawberry named after himself was originated by a veteran strawberry-enthusiast. I obtained his address, and wrote him, sending him a sample of our method of potting plants in jadoo. Below is his reply:

Mr. A. I. Root:—GLEANINGS and the Darling strawberry-plant were received. I never saw a plant shipped in as nice condition, and with such extra large roots, as the Darling. I do not know whether I can pot plants and send them in such good condition; however, I will try to send you a few plants of the numbers named. I never sold any plants or berries, but have sent many plants to friends and others. I sold my ground a year ago, where I grew berries for 26 consecutive years, and very many fine ones. I now have only the east end of a forty-foot lot, and occupy a place of, say, 35 feet by about 60 in berries; but it is astonishing to see what can be grown on a patch of that size. I am very glad to hear that you are meeting with a "happy surprise" in the Nick Ohmer. Your description of its foliage is correct, only I find some have five leaves on a stem. With me they have an abundance of fruit, and, when properly ripened, the quality is A No. 1.

I kept the runners off all along, and it will be some time before I can send you the plants. I am nearly 72 years of age, and must soon quit, although I have great delight in raising new seedlings. I have some of the Nick Ohmer and some of the No. 34, which are very nice. The seed was sown in pots about Christmas, and kept in the house. From one of No. 34 I have picked off four runners. I thought I could get it to bear this season; but I notice it is starting new runners. If they get strong enough I will pot one for you for its beauty of plant. JOHN F. BEAVER.  
Dayton, O., June 13.

From a newspaper clipping forwarded me by Mr. Beaver I take the following:

Mr. Beaver said one cause of failure in strawberry culture in a dry season was insufficient mulch around the plants to keep the soil cool and moist. The soil on his strawberry-beds was so wet that he had to protect his knees against the moisture while gathering the fruit, and all this without irrigation—simply plenty of good mulching. Mr. Beaver showed four plates of strawberries of such unusually large size and fine color as entirely to dispel all doubts as to the correctness of his mode of culture.

and there is one particular one that he thought would interest me especially. It is a hen on a nest, covered with real feathers, and a hen that can cackle; but the only way to make her cackle is to drop a nickel into the slot. Now, this is all very good, and not at all objectionable so far as the cackling is concerned. But this same hen lays eggs, and these eggs are prepared full of candy, chewing-gum, chocolates, and other dainties; so when you drop a nickel into the slot you not only hear the hen cackle, but you get an egg for your five cents, containing confectionery. Well, *this* is not very bad; but to make it wonderfully taking, one egg in a hundred contains a gold ring. This is supposed to be the "golden egg." The catalog declares the apparatus is specially desirable for "picnics, church fairs, and other entertainments." I have not a bit of doubt that this automatic hen, with her golden egg, would take in a vast number of nickels; and on the whole I rather think it is a good thing, perhaps, even for church fairs and festivals, providing the hen would cackle loud enough to arouse the consciences of Christian people, especially when the *gambling mania* begins to get a foothold in the church of God.

My house shall be called the house of prayer; but ye have made it a den of thieves.—MATT. 21:13.

#### A MISSIONARY WAR.

Our pastor said recently that our trouble with Spain is a missionary war. We are not fighting for more territory nor for more conquest. We are not fighting for self, but for the starving and much-wronged Cubans. And who shall say that the Spanish nation itself may not by this war be lifted out of the degrading superstitions of three centuries ago which still cling to it, and be forced by the logic of events to ally itself on the side of perfect political and religious liberty, to which she has always shown herself to be so implacable a foe?

#### Special Notices by A. I. Root.

In working the strawberry-plantation shown on page 407 of our May 15th issue, I mentioned using a three-tooth wheel-hoe. Well, this hoe does the business all right; but there are some weeds, like grass and dandelions, that must be cut off with something like a hoe. For this purpose we have just received from the manufacturer, Mr. G. W. Cole, of Canton, Ill., a sort of scuffle-hoe that runs just under the surface, and cuts off the weeds mentioned, and also reaches up under the foliage of the plant so as to get any weed without injuring the leaves or blossoms at all. In fact, one needs to be a little careful or he may run the steel blade so close as to cut the plant. For prices and particulars regarding the above wheel-hoe, address Mr. Cole as above.

#### THE PAPAYA (OR MELON) TREE.

The supply of seeds I brought from Bermuda for free distribution was exhausted in a very few days. I had no idea so many of the friends would want to try a tropical hothouse plant. I sent at once, however, to Mr. Morrison, and he promised to get me some more seed by the next steamer; but I learned that Mr. Baker, who owns this special variety, has been sick, and was unable to gather and dry the seed. I suppose it will come a little later on. I am very sorry indeed to keep so many of the friends waiting for seeds that I really expected would go by return mail. We have saved your stamped envelopes, and will send you some seeds just as soon as possible.

#### SLOT MACHINES FOR CHURCH FAIRS AND OTHER ENTERTAINMENTS.

One of our clerks handed me a catalog of new inventions in the line of slot machines;

# Columbia

Bevel Gear  
Chainless Bicycles.

\$125.

Columbia Chain Wheels, - \$75.

Hartford Bicycles, - - - 50

Vedette Bicycles, - - \$40, 35.

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Make Hill  
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